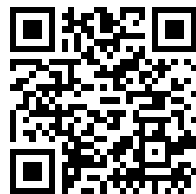


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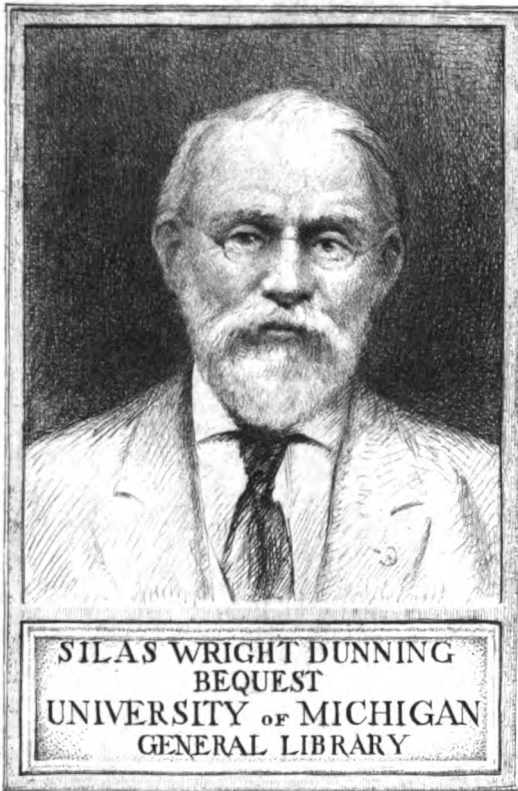
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- The Institution publishes a Quarterly Journal in the months of January, April, July, and October which is issued postage free to members in India and to all life members; but ordinary members wishing to have their journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.
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# United Service Institution of India.

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JANUARY 1917.

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### **I—New Members.**

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Lieut. R. A. Savory.

Major E. C. Withers, R.I.M.

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- (f) Two papers on the Crimean War.
- (g) One paper on the Indian Mutiny.
- (h) One paper on the Shenandoah Valley Campaign, 1861-62.
- (i) One paper on the Bohemian Campaign, 1866, to the Battle of Koniggratz, inclusive.
- (j) One paper on the Jena Campaign, 1806.
- (k) One paper on the Franco-German War, 1870.



## **Secretary's Notes.**

The charge for these papers is Rs. 5 each, which includes criticism by qualified officers.

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### **VI.—Contributions to the Journal**

With reference to Army Regulations, India, Volume II, paragraph 453, and King's Regulations, paragraph 453, as amended by Army Order 340 of 1913, intending contributors to the Journal of the United Service Institution of India are informed that action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee. Contributors are, therefore, responsible that the sanction of their immediate superiors has been obtained, and this should be noted on all articles sent for publication. Articles need not be submitted in duplicate.

Contributors must have their articles either typed or printed.

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(3) When a reference is made to any work, the title of such work is to be quoted.

(4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto, written on the outside, and the name of the competitor inside.

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June, 1917.

(6) Essays will be submitted for adjudication to referees chosen by the Council. No medal will be awarded if the Council consider that the best essay is not of a sufficient standard of excellence.

(7) The name of the successful candidate will be announced at a Council Meeting, which will be held in August or September, 1917.

(8) All essays submitted are to become the property of the United Service Institution of India *absolutely*, and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

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1. The United Service Institution of India is situated at Simla.
2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed on the opposite page.
3. The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published. War maps are on view in the Reading Room, with the positions of the troops, so far as is known, marked with flags, in each theatre of war.
4. There is a well-stocked library in the Institution, from which members can obtain books on loan, free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V. P. for the postage, or bearing by railway.
5. The Institution publishes a Quarterly Journal in the months of January, April, July, and October which is issued postage free to members in India and to all life members; but ordinary members wishing to have their journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.
6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found on the opposite page.
7. MEMBERS ARE RESPONSIBLE THAT THEY KEEP THE SECRETARY CAREFULLY POSTED WITH REGARD TO CHANGES OF ADDRESS.
8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months.



# United Service Institution of India.

## **RULES OF MEMBERSHIP.**

**A**LL officers of the Royal Navy, Army, Colonial Forces, and of Volunteer Corps in India and Gazetted Government Officers shall be entitled to become members, without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 75 + entrance fee (Rs. 10) = Rs. 85.

Ordinary members of the Institution shall be admitted on payment of an entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 5, to be paid in advance. The period of subscription commences on 1st January.

All members of the Institution resident in Simla for not less than 90 days during the year will be charged an *additional* subscription of Rs. 5 per annum from the 1st January 1917.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying the postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 8, in advance, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 8 per annum.

Serjeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 6.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

## **Contributions to the Journal.**

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para. 487, and King's Regulations, para. 453.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer, and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.



# United Service Institution of India.

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JANUARY 1917.

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## **SECRETARY'S NOTES.**

### **I—New Members.**

The following members joined the Institution between the 5th September and the 16th December 1916 inclusive:—

#### **LIFE MEMBERS.**

Lieut. R. A. Savory.

Major E. C. Withers, R.I.M.

#### **ORDINARY MEMBERS.**

Lieut. J. R. L. Bradshaw.

Captain L. D. Woolcombe.

Major A. G. Symonds.

Lieut. Colonel W. G. Moore.

Col. L. J. Blenkinsop, D.S.O.

Captain E. S. Walmsley.

Captain C. V. Bliss.

Lieut. B. R. Heaton.

### **II.—Tactical Problems.**

In order to assist officers working for tactical examinations, the Institution has schemes for issue to members only, at Rs. 5 each, which includes criticism and a solution by a qualified officer ; 26 schemes are now available.

### **III.—Military History Papers.**

(1) In order to assist officers in the study of military history, the Institution has sets of questions on the following campaigns.

- (a) One paper on the Waterloo Campaign.
- (b) Three papers on Callwell's Small Wars.
- (c) Two papers on the strategy of Russo-Japanese War.
- (d) Five papers on the battles of the Russo-Japanese War.
- (e) Two papers on the Afghan War, 1879—80.
- (f) Two papers on the Crimean War.
- (g) One paper on the Indian Mutiny.
- (h) One paper on the Shenandoah Valley Campaign, 1861-62.
- (i) One paper on the Bohemian Campaign, 1866, to the Battle of Koniggratz, inclusive.
- (j) One paper on the Jena Campaign, 1806.
- (k) One paper on the Franco-German War, 1870.



## **Secretary's Notes.**

The charge for these papers is Rs. 5 each, which includes criticism by qualified officers.

(2) Pamphlets dealing with the Shenandoah Valley Campaign from April 1861 to June 1862, the Bohemian Campaign, 1866 to the battle of Koniggratz inclusive, and the Battle of Liaoyang, can be obtained from the Secretary, Price Re. 1 each, or Re. 1-2-0 per V. P. P.

### **IV.—Maps.**

The Institution has for sale a variety of large scale maps, (2 and 4 inches to one mile), price As. 8 each.

They are specially useful for instruction in map reading, tactical schemes and in preparation for examination, and can be had either of English or Indian country.

### **V.—Premia for Articles in the Journal.**

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

### **VI.—Contributions to the Journal.**

With reference to Army Regulations, India, Volume II, paragraph 483, and King's Regulations, paragraph 453, as amended by Army Order 340 of 1913, intending contributors to the Journal of the United Service Institution of India are informed that action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee. Contributors are, therefore, responsible that the sanction of their immediate superior has been obtained, and this should be noted on all articles sent for publication. Articles need not be submitted in duplicate.

Contributors must have their articles either typed or printed.

### **VII.—Library Catalogue.**

The library catalogue revised up to 1st January 1916 is now available. Price Rs. 2 or Rs. 2-4-0 per V. P. P. A list of books received each year is published with the January Journal.

### **VIII.—Gold Medal Prize Essay, 1916-17.**

The Council have chosen as the subject for the Gold Medal Essay for 1916-17 the following:



**"The possibility of utilizing India as a military asset to the Empire more in accordance with her size and population than at present."**

The following are the conditions of the competition:—

(1) The competition is open to all gazetted officers of the Civil administration, the Navy, Army and Volunteers, who are members of the U. S. I. of India.

(2) Essays must be printed or type-written and submitted in *triplicate*.

(3) When a reference is made to any work, the title of such work is to be quoted.

(4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto, written on the outside, and the name of the competitor inside.

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June, 1917.

(6) Essays will be submitted for adjudication to referees chosen by the Council. No medal will be awarded if the Council consider that the best essay is not of a sufficient standard of excellence.

(7) The name of the successful candidate will be announced at a Council Meeting, which will be held in August or September, 1917.

(8) All essays submitted are to become the property of the United Service Institution of India *absolutely*, and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

(9) Essays should not exceed about 15 pages of the Journal, when printed, exclusive of any appendices, tables or maps.

### **IX.—Indian Army Lists.**

The Institution is prepared to supply members and units with manuscript, type-written or printed pages from old Indian Army Lists since 1800. Endeavours will also be made



## **Secretary's Notes.**

to procure extracts from the "Registers" prior to that date. The following will be the rates charged:—

|                              |     |           |
|------------------------------|-----|-----------|
| Manuscript copy of each page | ... | Re. 1 0 0 |
| Type-written copy, per page  | ... | Rs. 2 0 0 |
| Printed copy, per page       | ... | Rs. 3 8 0 |
| Binding if required          | ... | Extra.    |

It is regretted that our former arrangement with the press has come to an end, and we are no longer able to get the printing done as cheaply as before.

If facsimile of *type* is required the price of printed pages will range from Rs. 5-8 to Rs. 3-8 per page, according to the amount of matter on each page, the higher rate being charged for pages similar to those of the Indian Army in the current Army List.

### **X.—War Maps.**

War Maps are on view in the Reading Room of the Institution, with the positions of the troops, so far as is known, marked with flags, in each theatre of War.

### **XI.—Annual Subscriptions.**

The Committee again invite the attention of members to the large amount of unnecessary correspondence and expense annually caused to the Institution by the difficulty in getting in the annual subscriptions.

If members wish to resign their membership they have only to notify the fact in writing to the Secretary. If this is not done, it is presumed that they wish to remain members and the Journal will continue to be posted regularly to their last known address.

Much inconvenience and unnecessary correspondence is also caused by the failure of members to notify their changes of address or to make any arrangements for the Journal to be sent after them, when they change their address.

The remedy for both these matters lies with members themselves, and it is for their consideration whether they agree to continue supplying the Journal to those who have not paid their subscriptions, and to have the time of their staff largely taken up in issuing reminders and trying to trace addresses.

### **XII.—Missing Journals.**

The set of Journals of the U. S. I. of India in our library is deficient of Volume XII for the year 1883; also the copy of Volume



I, for the years 1871-72, which we have is incomplete. The Committee would be glad if anyone in possession of the above copies will kindly communicate with the Secretary.

**XIII.—Gold Medal Prize Medal, 1916.**

The Gold Medal has been awarded to Major W. E. Crum, Calcutta Light Horse. The winning essay is published in this number of the Journal.

**XIV.—Amendments to Rules of the U. S. I. of India.**

SECTION VI—MEMBERSHIP.

*Paras 2 and 3 of the above section have been amended to read as follows:—*

**Para 2.**

“Life Members of the Institution shall be admitted on the following terms:—

Rs. 75 *plus* entrance fee Rs. 10 (*see* para 4) or Rs. 85 in all.

**Para 3.**

“Ordinary members of the Institution shall be admitted on payment of an entrance fee (*see* para 4) of Rs. 10 on joining, and an annual subscription of Rs. 5 *to be paid in advance*. The period of subscription commences on 1st January.”

**Para 3 (a)**

All members of the Institution resident in Simla for not less than 90 days during the year will be charged an *additional* subscription of Rs. 5 per annum from the 1st January 1917.

**XV. Presentations to the Institution.**

The Council gratefully acknowledge the receipt of a copy of the speeches by Lord Hardinge of Penshurst, 1910—16, in three volumes, forwarded with the complements of the author.

The Council also express their thanks to the Hon'ble Mr. J. P. Thompson I. C. S. for his gift to the Institution of an autographed letter from Lord Fitzroy Somerset, afterwards Lord Raglan, to Lieutenant-General Sir William Gomm, K. C. B., announcing the latter's appointment as Commander-in-Chief of Her Majesty's Forces in the East Indies. The letter is dated Horse Guards, 24th February, 1849.



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| REVENUE ...       | ... | ... | ... | £1,550,000  |
| BONUSES DECLARED  | ... | ... | ... | £8,170,000  |
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# The Journal

OF THE

## United Service Institution of India.

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Vol. XLVI.

JANUARY 1917.

No. 206.

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### **GOLD MEDAL PRIZE ESSAY, 1916.**

### ***The Improvement in Strength and Efficiency of the Volunteer Force in India.***

BY

MAJOR W. E. CRUM, CALCUTTA LIGHT HORSE.

---

Before discussing possible methods for improving the strength and efficiency of the Auxiliary Services in India, it is necessary to consider the duties which they may be called upon to perform.

In large towns Volunteers will be used to assist the Regulars in quelling local disturbances and will temporarily take the place of Regulars, should the latter be called away from the towns; most frequently they would find themselves opposed to an unarmed or badly armed mob, but they must also be prepared to tackle more serious opposition as in the case of the Singapore mutiny, and it does not follow that their actions would be confined to street fighting.

The duties of Railway Volunteers would probably be confined to the defence of Stations, Bridges, etc. and to patrol duty on the lines.

In districts such as Assam and Bihar the defence of localities and the rounding up of small insurgent bands would be the principal duties.



An attempt was made at the beginning of the war by a section of the Press opposed to Universal Service to argue that because the Volunteers had done all that was required of them in the past, special attention being drawn to their conduct in the Tilak riots in Bombay, and the Bakri Id riots in Calcutta, therefore both in numbers and efficiency they were able to deal with any situation which might reasonably be forthcoming.

Such arguments are precisely those which prevailed in Great Britain before the war; we must be prepared to deal with really serious disturbances of the peace either internal, when Volunteers would be called upon to assist Regulars, or external, when they would have to take the place of Regulars, and it is therefore axiomatic that every European and Anglo-Indian capable of bearing arms should be enrolled, while the pitch to which training should be carried must depend not so much on the minimum that may be required as on the maximum that can be attained in the limited time available for instruction, though the lines on which the training will proceed must vary with circumstances.

Assuming, therefore, that the greatest possible numbers and the greatest possible efficiency in the time available are the ideals to be aimed at, it will be impossible to discuss the subject as a volunteering movement pure and simple, for it is the confirmed opinion of practically every volunteer officer and the almost unanimous opinion of the British civil community in India that these ideals cannot be attained except by Universal Military Training, and that any serious discussion of the question is futile unless the possibility of this course is admitted.

**STRENGTH.**—No attempt has been made to deal with the statistical position. Census figures of both Europeans and Anglo-Indians appear to be of doubtful accuracy, while no great confidence can unfortunately be placed in many of the Volunteer records, especially before the war.



It is a matter of common knowledge that before the war a very large percentage of able bodied British and Anglo-Indians were not volunteers, and of those who were volunteers, a very large number were only nominally efficient.

Statistics will therefore probably be misleading and incorrect assumptions may be drawn from them.

There are three methods by which the numbers of the auxiliary troops in India may possibly be increased; by persuasion, inducement, or compulsion, and variations of all three methods have been advocated since the war began.

PERSUASION.—It has been argued that the question of the increase in the numerical strength of the Volunteers lies in the hands of their employers and that if the employers could be persuaded to encourage their employees to volunteer the whole question would be solved. To a very great extent this is true, but can the employers be so persuaded?

At the present moment there is hardly a Britisher in India who is not a volunteer, but a very different state of affairs existed before the war, and it would be dangerous to assume that after the war is over employers will not relapse to a great extent into their former state of indifference, in some cases even of hostility, towards volunteering.

This applies especially to the big towns in India. Before the war frequent efforts were made to appeal to employers, but in certain cases the reply was always the same, that by encouraging their men to volunteer these employers would place themselves at a disadvantage as compared with those who discouraged volunteering, and that since they paid government to provide for public safety there was no necessity for them to do so themselves.

There was no lack of efficient recruiting before the war; energetic personal effort in this direction was made by Recruiting Committees, and indeed by every keen volunteer in India.

In one case a smoking concert in one of the leading Calcutta theatres was arranged at which powerful speeches



were delivered by His Excellency the Governor, the General Commanding the Brigade, and a prominent and popular Calcutta merchant; no visible effect was produced.

Appeals to patriotism were made in vain, and there is no reason to suppose that what has failed in the past will succeed in the future.

When it is remembered that the total strength of the Territorials in the British Isles at the commencement of the war was little more than one per cent of the male population, it is surely vain to expect that by persuasion alone we can hope to increase the numbers of volunteers in India.

INDUCEMENTS.—From time to time it has been suggested that inducements in the way of remission of income tax should be offered. Not only would this be very expensive to the state, but it would also be unfair in that the man with the larger income would get better paid—for this idea amounts to nothing less than payment—than his possibly far more efficient neighbour who unfortunately possessed a lower income.

It has been suggested that Volunteers should be exempted from attendance on juries; not only would this inducement offer little attraction, but it would also result, if it did attract, in denuding the law courts of British jurymen.

Clubs for Volunteers have in some cases been most successful, and undoubtedly attract; it is probable that more enterprise could be shown in this direction.

It has further been suggested that honours should be more frequently conferred on Officers of Volunteer Corps, and in the words of the letter of December 7th, 1914, from the Committee of the Burma Chamber of Commerce to the Local Government,—“that the command of a Regiment should be made the greatest civil honour obtainable and the “hall mark” of good citizenship.”

Undoubtedly recognition by government of good service would have a stimulating effect on volunteering generally.



**COMPULSION.**—This solution of the difficulty has already received the support of practically every body representative of British trade in the country. The Bengal, Bombay and Burma Chambers of Commerce, the European Association with its branches in Calcutta, Bombay, Madras, Karachi, Delhi, Lucknow, Assam, and Bihar, have all given it as their opinion, and have pressed this opinion on Government, that a system of Universal Training is the only system by which any increase in numbers can be achieved.

The system exists in Australia, Canada and South Africa; it has lately been introduced in Singapore. It has been asked for by employers as a right in that under the present system the burden of defence is not equitably distributed, for the willing horse does all the work, and in the opinion of the great majority of non-official Europeans it is the only means by which the strength of the Auxiliary Services can be appreciably increased.

A distinction must however be clearly drawn between Universal Training, by which is meant the compulsory training of every man to perform the same duties now carried out by Volunteers, and Universal Service, a much more comprehensive system of compulsion under which men would be compelled to serve anywhere in India, or even in the Empire. The latter would be unsuitable in India, where the reserve of older men and women, capable of clerical work, is non-existent, and where no leisured classes exist.

This universal training scheme should comprise all classes of British in India, and Anglo-Indians.

The subject of volunteering for Indians is beyond the scope of this essay; if it is to come there will be all the more need for universal training for Europeans, while volunteering for Indians under the present lax regulations of the Volunteer Act is unthinkable and could only be possible under the strictest discipline on a Territorial or Militia basis.

**EFFICIENCY.**—The chief points to be considered in discussing improvement in efficiency in the Volunteer force are the training of officers, the training of men, musketry, organisation



and equipment, the standard required for efficiency, finance by Government and discipline.

TRAINING OF OFFICERS.—“ The first essential for efficiency is a well-trained corps of officers ; General Officers Commanding Divisions are responsible for their training. It is the duty of General Officers Commanding to organise classes for officers as laid down in ‘Training and Manœuvre Regulations’ ” (Army Regulations, Volume IX, para 64).

But a very large proportion of the officers of Volunteer Corps are not well-trained, and the effect of this is at once shown in the poor attendance and inefficiency of the men under their command.

The first essential is a ruthless weeding out of officers who either for physical or other reasons are not fit for their duties. General Officers Commanding Brigades should make it their duty to become personally acquainted with Volunteer Officers in their districts, and reports should be issued on their capabilities and standing.

The examinations for Proficiency should be carried out as laid down in Volunteer Regulations with strictness, and more attention should be paid to proficiency in the field.

The passing of subjects in D (1) and equivalent examinations should be compulsory for promotion, and not voluntary, though the standard might be somewhat below that required for regular officers.

Classes in such subjects, a tactics, especially dealing with situations likely to occur in the particular Regimental area, Musketry, Topography, Sketching, Demolitions, Defence of Posts and Localities, should be arranged at which attendance is compulsory and opportunities should be taken to organize Staff Rides, discuss Tactical Schemes and fight War Games.

The incentive must come from above, Volunteer Officers being encouraged to suggest, and free opportunity being given for discussion.

So few opportunities occur for Volunteer Officers to discuss with Regular Officers problems in Tactics and Organisation



that when they do occur the Volunteers are apt to be very diffident in expressing opinions and asking reasons.

Many Volunteer Officers want to learn, but have not the opportunities ; leading, teaching and encouragement are required, but are not given ; Volunteer Officers must at present find out everything for themselves.

The effect of combined training with Regular troops on Volunteers generally is dealt with in a later section of this article ; the effect on Officers of Volunteers would be most beneficial. In combined work Regular and Volunteer Officers commanding companies, squadrons and troops could be interchanged, by which method Volunteer Officers would gain enormously in confidence, and would learn by example far more than they could ever learn from the book.

Attempts are undoubtedly being made to improve the training of officers, but there is still a great want of system, and a far more rigid observance of the instructions laid down in Volunteer Training, and Training and Manœuvre Regulations is necessary.

After the war the aim must be to give commissions only to those who hold or have held commissions in the Indian Army Reserve of Officers, thus ensuring a proper standard of proficiency and a Regular training.

**TRAINING OF MEN.**—Just as system is lacking in the training of officers, so it is lacking in the training of men.

“The training of the Volunteer will be progressive and confined to essentials, but any attempt to attain smartness at the expense of efficiency in musketry and field duties is to be deprecated. Training is to be practical.” (Army Regulations, Volume IX, para 65).

In Training and Manœuvre Regulations, Indian Supplement, Section 2, these principles are again emphasized.

But Volunteer Training is not carried out on these lines ; it is far too often confined to the dulllest parade ground movements, with the result that the men lose all interest in their work. Training is not progressive or practical, and unless General



Officers Commanding Brigades see that it is progressive, it will remain as it is at present.

"The course of annual training will be drawn up by Commanding Officers in consultation with the General Officer Commanding the Brigade." (Army Regulations, Volume IX, para 71).

Until the last two years this has not been attempted, at any rate generally, and until it is insisted on no system will be evolved.

In view of the many and varied duties of General Officers Commanding Brigades, it is probably impossible for them, in many districts, to devote as much time as they would desire to the supervision of Volunteer Training, and it is therefore suggested that a Staff Officer whose sole duty would be to look after the training of the Volunteer Regiments in the Brigade area should be appointed to each Brigade.

Objection might be raised to this appointment on the ground that such an officer would be usurping the work of the adjutants of regiments, but this would not be the case.

The adjutant of a Volunteer Regiment is the Staff Officer of the Commanding Officer; as such his duties are purely internal.

The duties of an Adjutant are detailed in Army Regulations, Volume IX, para 50; as a regular officer under the orders of a Volunteer commandant, the position of an adjutant is often exceedingly difficult, and necessitates great tact both on his part and on that of his Commanding Officer; it is difficult for the adjutant to interfere in any way with the scheme of training, or to do more than offer suggestions which may or not may be acted upon.

A Brigade Staff Officer for Volunteers would be the link between the Brigade Commander and the Regimental Commanders, and as such would have the authority of the Brigade, and would be able to advise Commanding Officers, who it must be remembered are not professional soldiers, as to their scheme of work, and to see that the systems as laid down by the Brigade were carried out.



Training for Volunteers must be made more attractive and practical, and encouragement should be given to men to specialise in subjects such as scouting, signalling, range finding etc. (Training and Man. Regulations, Section 39.)

But in addition to the above it is very desirable that a certain number of men in each corps should specialise in subjects which would be taught to every man in a regular regiment.

The time at the disposal of the average volunteer is so limited that it is impossible to teach him all the work that would be learnt by the regular soldiers, and the best way of overcoming the difficulty is by teaching a few men each year one special subject such as entrenching, defence of posts, simple bridging, demolitions, entraining and detraining of men and horses, camp routine, so that a certain number are always available who are experts in their particular subject.

It is suggested that Proficiency Examinations might be held for Volunteers in particular subjects, such as detailed above and that the reward for success should be a distinguishing badge, and an extra capitation grant.

Thus is each year parades would be held for all ranks for general instruction in marching, advance and rear guards, outposts, attack and defence, parade movements and ceremonial up to a certain standard of efficiency, and at the same time classes would be held at which a limited number of men would be instructed in some special subject, in which they should thus attain a considerable degree of proficiency.

Practically there is nothing new in the foregoing, which is simply an amplification of paras 65 and 69—Army Regulations, Volume IX ; but it is particularly desired to emphasize that what is laid down in Army Regulations, Volume IX, *must be carried out* and that a system must be organised under which the General Officers Commanding Brigades will be enabled to ensure that Volunteer Corps are in fact trained as they are meant to be trained, and possibly as they are supposed to be trained.



Another point which has been prominently suggested in many of the admirable letters to the newspapers during the past twelve months is the more active participation of regulars with volunteers both in parade ground drills and in field training.

No teaching is more effective than example and volunteers would be keen to appear to advantage in competition with regular troops.

But arrangements to carry into effect this combined work between regulars and volunteers must be organised by the regulars, the professional soldiers.

Volunteers are sensitive as to their status and have undoubtedly the feeling that Regulars look down on them, and treat their humble efforts perhaps not with scorn, but at any rate with indifference, and regard any suggestions of volunteers to participate as a nuisance interfering with their regular work and not to be encouraged.

In the great majority of cases volunteers are wrong, and most regular officers are only too glad to assist whenever asked to do so, but hesitate to offer ; on both sides therefore there is probably a feeling of diffidence and this can only be overcome by bringing Regulars and Volunteers together, not by offers from Regulars or by requests from Volunteers, but by organisation emanating from those who are in command of both.

MUSKETRY.—It is undoubtedly difficult to provide safe ranges in the neighbourhood of large towns, especially in a flat and densely populated country like Bengal, but it is always possible either to provide or subsidise 30 yards and miniature ranges for practice and education ; this is not generally done.

Practice in field firing is most important, not only for the musketry of Volunteers but also for their actual safety ; no number of ordinary field days, no instruction with blank ammunition can compare, for effect on the musketry, steadiness and discipline of a Volunteer Corps, with a couple of days field firing.

It is suggested that two or three days field firing should be one of the qualifications for efficiency in every corps, and that a



man should be bound to attend these as he is bound to attend Inspection Parade.

But for field firing money must be provided, for few corps have ground suitable for field firing at their doors, and the expense of a considerable journey cannot often be avoided.

ORGANISATION AND EQUIPMENT.—In the large towns the Organisation of Volunteers is based largely on the class system, and this system works well. Men prefer to serve with their own friends and a healthy rivalry is maintained between the various companies each of whose recruits are drawn from separate professions and départements.

Thus in 1914-15 the strength of the 1st Battalion, Calcutta Volunteer Rifles was organised as follows :—

- A. Coy.—Calcutta Free School Cadets.
- B.-1. „ Anglo-Indian Jewish Community.
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The 2nd Battalion Calcutta Volunteer Rifles, the Port Defence Volunteers and to a certain extent the Calcutta Scottish, are organised in similar fashion; the Cossipore Artillery Volunteers, whose members are chiefly assistants in Jute Mills, are organised by districts; in the Calcutta Light Horse, which is recruited from the mercantile firms and the professions, men of the same firm are posted as far as possible to one troop, but no regular system is followed.

The introduction of universal service would therefore create no difficulties as regards organisation, and men would join as at present the corps to which their friends belonged or in which special companies are formed for their departments or trades.



The question of Supply and Transport is a subject to which little attention is paid in Volunteer Corps.

In this respect every corps should be self-contained, and probably subsidised motor transport would be the best method of providing requirements.

Arrangements should be made for motor transport for infantry regiments by which cars belonging to members of the corps would be registered and at once available for emergency, an officer being detailed for the work and being responsible for the provision of cars when required.

All this simply needs working out; cars are available in quantity but at present there is no system.

The equipment of corps, since they have to provide for themselves practically everything except arms and accoutrements, is generally very defective.

Haversacks and water bottles, the proper proportion of entrenching tools, signalling apparatus have all to be provided by the corps themselves.

Government should surely equip each corps with these essentials just as it does with rifles and swords, bandoliers and belts.

The number of machine guns in the keeping of Volunteer Corps is infinitesimal, and yet the most frequent opponents of volunteers, at any rate in the big towns, will be riotous street mobs, against whom one machine gun, would be worth 100 men armed with rifles.

Every corps is supposed to possess 2 rounds of dummy cartridges per rifle, but it is quite certain that corps are not issued with this proportion.

Light Horse Corps should be issued with picketing gear; at present they must provide this out of their Regimental Funds.

In many other ways the Organisation and Equipment of Volunteer Corps can and should be improved, but money is required.

STANDARD OF EFFICIENCY.—A Rifle Volunteer in order to be classed as efficient must attend 9 parades and in order to be



classed as extra efficient 20 parades, during the year ; the respective numbers of drills to be attended by men of mounted Corps are 16 and 27. (Army Regulations, Volume IX, Paras 89 & 92).

It is absolutely impossible for any Volunteer to become or to remain efficient on 9 hours work a year, and equally impossible for him to become extra-efficient on 20 parades a year.

In their letter to the Government of Burma, dated December 7th, 1914, on Compulsory Training, the Burma Chamber of Commerce proposed to divide the Auxiliary Forces into four classes according to their length of service, and to make the standard of efficiency as regards drills lower for those classes who had done the longer service.

A division on some such system seems to be sound though the number of drills for the latest joined class, 25 per annum, is far too low.

The classes were divided as follows by the Burma Chamber :—

- (A) Active Force; 5 years; 25 drills and 6 Field Days and Musketry.
- (B) 1st Reserve; 3 years; 12 drills and Musketry.
- (C) 2nd Reserve; 3 years; Musketry only.
- (D) 3rd Reserve; 3 years; no duties.

These divisions are somewhat complicated, and a simpler scheme would be service of a minimum of 8 years in an active force, and thereafter for 6 years in the reserve, the qualification for efficiency in the latter being a musketry course and attendance once a year at inspection.

Statistics of the drills attended by active members of the Calcutta Light Horse during the season 1913-14, before the war, show that out of 287 active members 37 were non-efficient attending less than 16 drills, 47 were efficient attending between 16 and 27 drills and 203 were extra efficient attending over 27 drills of whom 111 or nearly 40% of the Corps attended over 40 drills.

There seems therefore to be no reason why a minimum of 40 drills, or one a week, leaving out the hot weather months April to June, should not be made the standard for efficiency



during the first period of service, together with a certain number of whole day field days, or a certain number of days in camp.

Each year's efficient service in the Territorial or Colonial forces might count towards the period of years to be completed in the Active Force.

It is however certain that no stricter standard of efficiency as regards number of drills can be attained under purely voluntary conditions of service, and since more frequent attendance is absolutely essential if any real improvement is to be made we are again forced with the apparent necessity for some system of Universal Training. There is no reason whatever from a business point of view why men should not be spared to do at least one drill a week, and *provided all were treated alike* there could be no complaint from mercantile or trading firms.

**FINANCE.**—If the Government of India require an efficient Auxiliary Force, they must be prepared to pay for it, and the more efficient the force becomes the more will it cost, and the more will it be worth.

An Officer on receiving his commission is given Rs. 100 (Army Regulations, Volume IX, para 132) to provide his equipment and uniform; the first cost of the above is to an Officer of Light Horse approximately Rs. 950, to an Officer of Volunteer Rifles Rs. 800. After the first payment of Rs. 100 the Officer receives nothing and is expected to provide at his own cost all renewals of uniform.

It follows that a considerable expenditure has to be faced by any one accepting a commission, and it must surely be admitted that this is entirely wrong in principle, and must deter many young men of the best type from accepting commissions.

The initial cost of uniform for a Trooper in a Light Horse Regiment is about Rs. 65; this is paid for out of Capitation Fund.

On the assumption that a Trooper would remain on the active list for 8 years, and that certain articles of uniform need



replacing at intervals during this period a fair average yearly cost per man is Rs. 20, and this is borne out by actual figures.

The clothing of Rifle Volunteers is of course somewhat cheaper, but approximately half the Capitation Grant is devoted to clothing alone according to figures taken from the Capitation accounts of a large number of Corps.

The Grants for Camps of Exercise are altogether inadequate, and it is interesting to compare the actual amounts spent, in some cases largely out of Regimental Funds, with the amounts actually allotted by Government to Calcutta Corps in 1914-15 including forage and ration allowance.

|                                          | <i>Spent.</i> | <i>Allotted.</i> |
|------------------------------------------|---------------|------------------|
|                                          | Rs.           | Rs.              |
| Calcutta Port Defence Volunteers         | ... 1,953     | 1,000            |
| Calcutta Light Horse                     | ... 6,807     | 2,882            |
| Cossipore Artillery Volunteers           | ... 7,172     | 1,714            |
| 1st Calcutta Volunteers Rifles           | ... 4,907     | 1,359            |
| 2nd    "               "               " | ... 1,756     | 1,716            |

In other words Corps which have substantial Regimental Funds, or whose members are able themselves to contribute towards the cost of their food and refreshment in camp and at field-days are able to allow themselves a certain amount of training in this respect; other Corps have to go without because the Government grants are so meagre. The actual Government Camp Grants to Calcutta Corps including forage and ration allowances for the year 1914-15 are compared below with the number of their efficient.

|                                          | <i>Efficients.</i> | <i>Grant.</i> |
|------------------------------------------|--------------------|---------------|
|                                          | Rs.                | Rs.           |
| Calcutta Port Defence Volunteers         | ... 524            | 1,000         |
| Calcutta Light Horse                     | ... 446            | 2,882         |
| Cossipore Artillery Volunteers           | ... 814            | 1,714         |
| 1st Calcutta Volunteer Rifles            | ... 1,055          | 1,359         |
| 2nd    "               "               " | ... 1,883          | 1,716         |
|                                          | <hr/>              | <hr/>         |
| Total                                    | ... 4,722          | 8,671         |
| Average grant per efficient              | ... Rs. 1-13-0,    |               |



As already suggested Government should give substantial help towards Musketry, especially towards field firing and ranges.

It is proposed that a system of payment for motor transport when on service and a system of subsidy in peace time be devised.

In brief the suggestions with regard to finance are that without much more liberal assistance Volunteers cannot be expected to do any more in the way of practical field work than they are doing at present, and increased capitation, camp and musketry grants are essential to any improvement in efficiency.

**DISCIPLINE.**—This subject has been left till the last because it is really the most important. At first sight it would appear that Sections 18 to 20 of the Volunteer Act confer on Commanding Officers the power to enforce discipline, and to ensure that their men shall attend drill and parade at such time as may be appointed.

Section 18 refers to actual duty other than drill or parade, but to bring into effect the penalties prescribed under the section it is necessary to act under Section 9, and it is a very serious matter to convene a general Court Martial after obtaining the sanction of the Local Government, and to have to report the proceedings to the Local Government and obtain the sanction of the Local Government to the sentence, before such sentence may be enforced.

Section 19 may be regarded as a dead letter; its enforcement would lead to wholesale resignations under Section 13; and under the present system of Capitation Grants no Commanding Officer can afford to lose the services of Volunteers who perform their duties according to the standard laid down in Army Regulations, Volume IX, para 89, and earn for the Corps their Capitation Grants.

Section 7 (A) (1) allows the Commanding Officer to strike off the rolls any Volunteer who has not been efficient for two years, but the standard required for efficiency is so low



that a very large proportion of the men earning the capitation grant are in fact most inefficient volunteers, and the Commanding Officer has really no power to make them more efficient.

Section 13, which gives a Volunteer power to resign at any time on giving seven days notice, is most subversive of good discipline.

Under Section 16 the limits of service are defined, and the section, in the case of Calcutta, means that under no circumstances is a Volunteer bound to obey an order to serve South or East of Circular Road or West of the River Hugli; it is unnecessary to comment on the absurd situation thus created.

No section in the Act gives any power to Commanding Officers to deal with offences subversive of discipline as detailed in Army Regulations, Volume IX, para 36, or in the case where Volunteers enter into discussions in the Press regarding the conduct and capacity of their Officers.

It must therefore be evident that however strict the disciplinary sections of the Volunteer Act may appear, they are in practice ineffective; but it is exceedingly difficult to suggest any amendments of the Act which would make them more effective.

Any attempt to add greater strictness to the Act would in ordinary times simply result in the resignations of the great numbers of Volunteers who do little more than earn the Capitation Grant; nor would those remaining become more efficient, for they would, with a few possible exceptions consist of the men who always have and always will either from a love of soldiering or from truly patriotic motives make themselves really efficient without compulsion. No greater efficiency would be attained, but the numbers of those who are at any rate capable of moderately straight shooting and who have some knowledge of the rudiments of drill, would be greatly reduced.

One is therefore again driven to the conclusion that just as under the purely voluntary system no increase in numbers can be expected, so, without some system of universal training, greater



discipline, and *prima facie* greater efficiency of numbers, cannot be obtained.

Under the heading of Standard of Efficiency the number of parades to be performed in the event of the introduction of a scheme of Universal Training has been discussed, the question of organisation has been treated under the heading of Organisation and Equipment. It remains to consider the subject of penalties for non-efficiency, and this is undoubtedly the most difficult question in any compulsory system.

First offences might be suitably met by a fine, but a fine which would be a severe penalty to an Anglo-Indian of small means, would be no penalty at all to a wealthy Britisher.

It would therefore seem desirable to institute a high maximum penalty, and to make the punishment fit not only the crime but also the pocket of the criminal.

Non-payment of a fine must carry with it the penalty of imprisonment, while old offenders would be liable to imprisonment without the option of a fine.

Possibly it would be necessary to legislate for the punishment of employers who did not give the men opportunities of making themselves efficient.

It is open to question whether the proper Court to deal with these matters should be composed of members of the Regiment concerned only, or should also comprise members of other regular or volunteer corps; it might be necessary to invoke the services of civil courts.

This subject of penalties must be thoroughly thrashed out and legislated for before any system of compulsory training can be brought into force, for, on account of the wide divergence of the classes to be conscripted the question of the amount of punishment to be meted out to offenders is one of extreme difficulty.

Summing up the foregoing we arrive at the following conclusion:—

That as regards strength, no material improvement can be expected without some form of Universal Training.



That as regards efficiency, universal training is also imperative in order to ensure discipline and attendance at parades, but that we also require (1) a much more rigid observance of the regulations for the Volunteer force as regards the training and efficiency of officers and men, which can probably be obtained by the appointment of Brigade Staff Officers to superintend this training, (2) more attention to Musketry by way of improvement of ranges and insistence on field firing, (3) better Organisation and Equipment, (4) a higher standard of efficiency and (5) a much more liberal finance by government.

It is little use to carry out any one part of this suggested programme by itself; the success consequent on the introduction of any one of these proposals is dependent on their adoption as a whole.

Numbers without a system of training; training system without sufficient funds; ample funds without power to compel men to serve and spend them—are all useless.

But the material for a splendid citizen force is available, and if this material could be collected and trained as it should be it is confidently predicted that India would possess an Auxiliary Army capable of undertaking any of the duties which it might reasonably be called upon to perform, and that a real safeguard for the internal and external security of India would be established.

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**Lecture on "Experiences of ten months in  
Germany as a Prisoner of War from the  
Retreat from Mons."**

DELIVERED BY

CAPTAIN L. M. ROUTH, R.A.M.C.,

*At Simla on the 31st August 1916.*

LADIES & GENTLEMEN,

I very much appreciate the honour afforded me in allowing me to give you some account of my experiences in Germany as a prisoner of war. It gives me an opportunity of putting on record the barbarous way in which prisoners of war, especially officers were, and to a certain extent still are, treated in Germany. When one remembers Donington Hall, an old country mansion, where German Officers in England are living in comparative comfort, and where a benevolent Government spent £20,000 in preparing it for their reception, it is indeed a galling thought to compare it with the squalor, overcrowding, insanitary conditions, limited food supply, and the marked discomfort prevailing in the German camps.

I was taken prisoner in the early days of the war, at Landrecies, after the retirement of the British troops from that place, on August 26th, 1914, being the third day of the great retreat from Mons, and was liberated by exchange on June 29th, 1915.

The lot of a prisoner of war can at no time be considered an enviable one and as such in Germany during the early days of the war, when popular feeling against England was especially virulent, the position was no easy one.

The marked antipathy, especially towards the "Englander", appeared to be initiated by a mixture of hate and fear. Hate, because they see in England a foe whose maritime strength they can never equal, an Empire whose vast overseas dominions and powers of colonising they envy; and fear because they realise that but for General French's so called "Contemptible Little Army", and the power of our Navy, Paris would probably have



fallen during the early days of the war, leaving Germany free to deal with Russia, and then to exert all her strength against England.

After mobilising with No. 4 Field Ambulance, 2nd Division, we crossed over to France *via* Southampton and Boulogne on the *Armenian*, a vessel since sunk, on the early morning of August 16th, and were attached to the 4th or Guards Brigade.

After 24 hours in a rest camp just outside Boulogne, a city gaily bedecked with bunting, in honour of our Expeditionary Force, we entrained to a place called Wassigny, about 60 miles from Mons, and from there marched in a north-easterly direction by stages towards Mons.

We reached Quevy le Grand, a village about 3 miles from Mons on Sunday August 23rd, the day of the commencement of the battle of Mons, and from there witnessed considerable artillery activity.

That evening Captain Sutcliff R.A.M.C. (one of the officers whose life was sacrificed later at Wittenburg typhus camp) and myself, with 40 stretcher bearers, and three ambulances, were ordered up to the firing line to collect some wounded. The sky was lured from the glow of burning houses, but all was then quiet, for the Germans did not resume their attack till dawn the following morning.

On the 24th at 2-30 a. m. the order came to retire, and the retreat had begun. We retraced our footsteps by forced marches, starting each day before dawn, and reaching our destination late at night. Every available road was full of British troops, and Belgian and French refugees. There was no sign of French or Belgian soldiers. We recrossed the Belgian frontier into France, past the monument commemorating the battle of Malplaquet, which we had noticed on our outward journey two days previously. The days were hot and the nights cold. During the days marching a number of men fell out from heatstroke and sheer exhaustion.

Our ambulances soon became full inside and covered above with the kits of men who were too exhausted to carry their own.



***Ten months in Germany.***

Two Medical Officers remained behind with those wounded who were unfit to travel, and after spending two nights at Bavay, a small town on the way, we reached Mons on September 1st, under an escort of six German soldiers and a Non-Commissioned Officer.

During this march to Mons, we heard the heavy bombardment of the fortress of Mauberge, only a few miles distant where 40,000 French were besieged. We passed many small trenches not more than two feet deep, that had been hastily dug by our army in rearguard actions in the retreat. We realised the German's one aim and object was Paris, for on every sign-post, and on many walls and houses, was chalked up the distance to Paris, and the probable date of arrival there, such as 'Paris 150 kilometres' 'Paris September 9th', and the like.

On reaching Mons, a large well built town of about 35,000 inhabitants, we were paraded three times round the main streets of the city, presumably for the purpose of exhibiting a large batch of prisoners, and as the streets are all cobbled the jolting endured by the wounded men in our eight ambulances must have been agony.

The Belgian populace were most sympathetic, and whenever opportunity offered, thrust upon our men, sandwiches, chocolates, tobacco, etc. Finally we were placed for the night in some very dirty rooms in a large barrack, over a filthy stable, and had to wade through a yard eighteen inches deep in horse refuse to get there; the Germans had thoughtfully removed the planks covering this quagmire, when they saw we were about to enter with our wounded.

The next morning we were separated for good from our wounded and marched down to the station. We found that such kit as we still possessed had been rifled during the night, and few amongst us retained such articles as field glasses or compasses.

After being locked up that day in the Station Master's office, which had been looted and the safes broken open, towards evening we were relieved of all our razors and knives, both officers and men. The officers were then entrained in a very lengthy



liberate us ; numerous aeroplanes filled the sky and the sound of gun fire was incessant, for this was the day of Le Cateau. Our captors cheered us by remarking that it was no use letting us go, as they were about to capture the whole British Expeditionary Force, a statement which but for superb generalship would have proved true.

It took us many days to realise we were actually prisoners of war, for under the Geneva Convention we anticipated release as soon as our services were no longer required for the treatment of those wounded we were taken with: but our eyes were soon to be opened.

We remained at Landrecies for three busy days, occupied in operating and treating the wounded under our charge, including a few Germans, and were joined by portions of other captured ambulances.

Most of our riding horses were soon commandeered by the Germans, who further made no attempt to provide us or our horses with food, although we numbered upwards of 300 men. The Officers were however allowed to scour the village, and were fortunate in finding large quantities of biscuits and bully beef which had been left behind by the Guards.

As we were all taken in just what we stood up in, and such as we carried on our horses, many of us were able to replenish our wardrobes by making use of the great coats, cardigan jackets, socks, tooth brushes, etc., left behind by the Guards. Most of the Officers made use of a Guardsman's kit bag, of which there were many.

The day before leaving Landrecies, after representing to the German authorities our limited food supply, we were allowed to catch, kill, and eat two pigs which had belonged to the French inhabitants of the town who had fled.

During these days the Germans remaining in the town occupied their time by looting and destroying anything that took their fancy.

On August 29th we received orders to move with our personnel, ambulances, and as many of the wounded as were able to be moved.



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Haversacks and water bottles, the proper proportion of entrenching tools, signalling apparatus have all to be provided by the corps themselves.

Government should surely equip each corps with these essentials just as it does with rifles and swords, bandoliers and belts.

The number of machine guns in the keeping of Volunteer Corps is infinitesimal, and yet the most frequent opponents of volunteers, at any rate in the big towns, will be motous street mobs, against whom one machine gun would be worth 100 men armed with rifles.

Every corps is supposed to possess 2 rounds of dummy cartridges per rifle, but it is quite certain that corps are not issued with this proportion.

Light Horse Corps should be issued with picketing gear: at present they must provide this out of their Regimental Funds.

In many other ways the Organisation and Equipment of Volunteer Corps can and should be improved, but money is required.

STANDARD OF EFFICIENCY. A Corps Volunteer in order to be classed as efficient must attend 70 parades and in order to be



classed as extra efficient 20 parades, during the year ; the respective numbers of drills to be attended by men of mounted Corps are 16 and 27. (Army Regulations, Volume IX, Paras 89 & 92).

It is absolutely impossible for any Volunteer to become or to remain efficient on 9 hours work a year, and equally impossible for him to become extra-efficient on 20 parades a year.

In their letter to the Government of Burma, dated December 7th, 1914, on Compulsory Training, the Burma Chamber of Commerce proposed to divide the Auxiliary Forces into four classes according to their length of service, and to make the standard of efficiency as regards drills lower for those classes who had done the longer service.

A division on some such system seems to be sound though the number of drills for the latest joined class, 25 per annum, is far too low.

The classes were divided as follows by the Burma Chamber :—

(A) Active Force; 5 years; 25 drills and 6 Field Days and Musketry.

(B) 1st Reserve; 3 years; 12 drills and Musketry.

(C) 2nd Reserve; 3 years; Musketry only.

(D) 3rd Reserve; 3 years; no duties.

These divisions are somewhat complicated, and a simpler scheme would be service of a minimum of 8 years in an active force, and thereafter for 6 years in the reserve, the qualification for efficiency in the latter being a musketry course and attendance once a year at inspection.

Statistics of the drills attended by active members of the Calcutta Light Horse during the season 1913-14, before the war, show that out of 287 active members 37 were non-efficient attending less than 16 drills, 47 were efficient attending between 16 and 27 drills and 203 were extra efficient attending over 27 drills of whom 111 or nearly 40% of the Corps attended over 40 drills.

There seems therefore to be no reason why a minimum of 40 drills, or one a week, leaving out the hot weather months April to June, should not be made the standard for efficiency



during the first period of service, together with a certain number of whole day field days, or a certain number of days in camp.

Each year's efficient service in the Territorial or Colonial forces might count towards the period of years to be completed in the Active Force.

It is however certain that no stricter standard of efficiency as regards number of drills can be attained under purely voluntary conditions of service, and since more frequent attendance is absolutely essential if any real improvement is to be made we are again forced with the apparent necessity for some system of Universal Training. There is no reason whatever from a business point of view why men should not be spared to do at least one drill a week, and *provided all were treated alike* there could be no complaint from mercantile or trading firms.

**FINANCE.**—If the Government of India require an efficient Auxiliary Force, they must be prepared to pay for it, and the more efficient the force becomes the more will it cost, and the more will it be worth.

An Officer on receiving his commission is given Rs. 100 (Army Regulations, Volume IX, para 132) to provide his equipment and uniform; the first cost of the above is to an Officer of Light Horse approximately Rs. 950, to an Officer of Volunteer Rifles Rs. 800. After the first payment of Rs. 100 the Officer receives nothing and is expected to provide at his own cost all renewals of uniform.

It follows that a considerable expenditure has to be faced by any one accepting a commission, and it must surely be admitted that this is entirely wrong in principle, and must deter many young men of the best type from accepting commissions.

The initial cost of uniform for a Trooper in a Light Horse Regiment is about Rs. 65; this is paid for out of Capitation Fund.

On the assumption that a Trooper would remain on the active list for 5 years, and that certain articles of uniform need



replacing at intervals during this period a fair average yearly cost per man is Rs. 20, and this is borne out by actual figures.

The clothing of Rifle Volunteers is of course somewhat cheaper, but approximately half the Capitation Grant is devoted to clothing alone according to figures taken from the Capitation accounts of a large number of Corps.

The Grants for Camps of Exercise are altogether inadequate, and it is interesting to compare the actual amounts spent, in some cases largely out of Regimental Funds, with the amounts actually allotted by Government to Calcutta Corps in 1914-15 including forage and ration allowance.

|                                              | <i>Spent.</i> | <i>Allotted.</i> |
|----------------------------------------------|---------------|------------------|
|                                              | Rs.           | Rs.              |
| Calcutta Port Defence Volunteers ...         | 1,953         | 1,000            |
| Calcutta Light Horse ...                     | 6,807         | 2,882            |
| Cossipore Artillery Volunteers ...           | 7,172         | 1,714            |
| 1st Calcutta Volunteers Rifles ...           | 4,907         | 1,359            |
| 2nd    "               "               " ... | 1,756         | 1,716            |

In other words Corps which have substantial Regimental Funds, or whose members are able themselves to contribute towards the cost of their food and refreshment in camp and at field-days are able to allow themselves a certain amount of training in this respect; other Corps have to go without because the Government grants are so meagre. The actual Government Camp Grants to Calcutta Corps including forage and ration allowances for the year 1914-15 are compared below with the number of their efficient.

|                                              | <i>Efficients.</i> | <i>Grant.</i> |
|----------------------------------------------|--------------------|---------------|
|                                              | Rs.                | Rs.           |
| Calcutta Port Defence Volunteers ...         | 524                | 1,000         |
| Calcutta Light Horse ...                     | 446                | 2,882         |
| Cossipore Artillery Volunteers ...           | 814                | 1,714         |
| 1st Calcutta Volunteer Rifles ...            | 1,055              | 1,359         |
| 2nd    "               "               " ... | 1,883              | 1,716         |
| <b>Total</b> ...                             | <b>4,722</b>       | <b>8,671</b>  |
| <b>Average grant per efficient</b> ...       | <b>Rs. 1-13-0.</b> |               |



As already suggested Government should give substantial help towards Musketry, especially towards field firing and ranges.

It is proposed that a system of payment for motor transport when on service and a system of subsidy in peace time be devised.

In brief the suggestions with regard to finance are that without much more liberal assistance Volunteers cannot be expected to do any more in the way of practical field work than they are doing at present, and increased capitation, camp and musketry grants are essential to any improvement in efficiency.

**DISCIPLINE.**—This subject has been left till the last because it is really the most important. At first sight it would appear that Sections 18 to 20 of the Volunteer Act confer on Commanding Officers the power to enforce discipline, and to ensure that their men shall attend drill and parade at such time as may be appointed.

Section 18 refers to a trial duty other than drill or parade, but to bring into effect the penalties prescribed under the section it is necessary to act under Section 9, and it is a very serious matter to convene a general Court Martial after obtaining the sanction of the Local Government, and to have to report the proceedings to the Local Government and obtain the sanction of the Local Government to the sentence, before such sentence may be enforced.

Section 19 may be regarded as a dead letter; its enforcement would lead to wholesale resignations under Section 13; and under the present system of Capitation Grants no Commanding Officer can afford to lose the services of Volunteers who perform their duties according to the standard laid down in Army Regulations, Volume IX, para 59, in terms for the Corps their Capitation Grants.

Section 7 (A) allows the Commanding Officer to strike off the rolls any Volunteer who has not been efficient for two years, but the standard required for efficiency is so low



that a very large proportion of the men earning the capitation grant are in fact most inefficient volunteers, and the Commanding Officer has really no power to make them more efficient.

Section 13, which gives a Volunteer power to resign at any time on giving seven days notice, is most subversive of good discipline.

Under Section 16 the limits of service are defined, and the section, in the case of Calcutta, means that under no circumstances is a Volunteer bound to obey an order to serve South or East of Circular Road or West of the River Hugli; it is unnecessary to comment on the absurd situation thus created.

No section in the Act gives any power to Commanding Officers to deal with offences subversive of discipline as detailed in Army Regulations, Volume IX, para 36, or in the case where Volunteers enter into discussions in the Press regarding the conduct and capacity of their Officers.

It must therefore be evident that however strict the disciplinary sections of the Volunteer Act may appear, they are in practice ineffective; but it is exceedingly difficult to suggest any amendments of the Act which would make them more effective.

Any attempt to add greater strictness to the Act would in ordinary times simply result in the resignations of the great numbers of Volunteers who do little more than earn the Capitation Grant; nor would those remaining become more efficient, for they would, with a few possible exceptions consist of the men who always have and always will either from a love of soldiering or from truly patriotic motives make themselves really efficient without compulsion. No greater efficiency would be attained, but the numbers of those who are at any rate capable of moderately straight shooting and who have some knowledge of the rudiments of drill, would be greatly reduced.

One is therefore again driven to the conclusion that just as under the purely voluntary system no increase in numbers can be expected, so, without some system of universal training, greater



discipline, and *prima facie* greater efficiency of numbers, cannot be obtained.

Under the heading of Standard of Efficiency the number of parades to be performed in the event of the introduction of a scheme of Universal Training has been discussed, the question of organisation has been treated under the heading of Organisation and Equipment. It remains to consider the subject of penalties for non-efficiency, and this is undoubtedly the most difficult question in any compulsory system.

First offences might be suitably met by a fine, but a fine which would be a severe penalty to an Anglo-Indian of small means, would be no penalty at all to a wealthy Britisher.

It would therefore seem desirable to institute a high maximum penalty, and to make the punishment fit not only the crime but also the pocket of the criminal.

Non-payment of a fine must carry with it the penalty of imprisonment, while old offenders would be liable to imprisonment without the option of a fine.

Possibly it would be necessary to legislate for the punishment of employers who did not give the men opportunities of making themselves efficient.

It is open to question whether the proper Court to deal with these matters should be composed of members of the Regiment concerned only, or should also comprise members of other regular or volunteer corps; it might be necessary to invoke the services of civil courts.

This subject of penalties must be thoroughly thrashed out and legislated for before any system of compulsory training can be brought into force, for, on account of the wide divergence of the classes to be conscripted the question of the amount of punishment to be meted out to offenders is one of extreme difficulty.

Summing up the foregoing we arrive at the following conclusion. —

That as regards strength, no material improvement can be expected without some form of Universal Training.



That as regards efficiency, universal training is also imperative in order to ensure discipline and attendance at parades, but that we also require (1) a much more rigid observance of the regulations for the Volunteer force as regards the training and efficiency of officers and men, which can probably be obtained by the appointment of Brigade Staff Officers to superintend this training, (2) more attention to Musketry by way of improvement of ranges and insistence on field firing, (3) better Organisation and Equipment, (4) a higher standard of efficiency and (5) a much more liberal finance by government.

It is little use to carry out any one part of this suggested programme by itself; the success consequent on the introduction of any one of these proposals is dependent on their adoption as a whole.

Numbers without a system of training; training system without sufficient funds; ample funds without power to compel men to serve and spend them—are all useless.

But the material for a splendid citizen force is available, and if this material could be collected and trained as it should be it is confidently predicted that India would possess an Auxiliary Army capable of undertaking any of the duties which it might reasonably be called upon to perform, and that a real safeguard for the internal and external security of India would be established.

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**Lecture on "Experiences of ten months in  
Germany as a Prisoner of War from the  
Retreat from Mons."**

DELIVERED BY

CAPTAIN L. M. ROUTH, R.A.M.C.,

*At Simla on the 31st August 1916.*

LADIES & GENTLEMEN,

I very much appreciate the honour afforded me in allowing me to give you some account of my experiences in Germany as a prisoner of war. It gives me an opportunity of putting on record the barbarous way in which prisoners of war, especially officers were, and to a certain extent still are, treated in Germany. When one remembers Donington Hall, an old country mansion, where German Officers in England are living in comparative comfort, and where a benevolent Government spent £20,000 in preparing it for their reception, it is indeed a galling thought to compare it with the squalor, overcrowding, insanitary conditions, limited food supply, and the marked discomfort prevailing in the German camps.

I was taken prisoner in the early days of the war, at Landrecies, after the retirement of the British troops from that place, on August 26th, 1914, being the third day of the great retreat from Mons, and was liberated by exchange on June 29th, 1915.

The lot of a prisoner of war can at no time be considered an enviable one and as such in Germany during the early days of the war, when popular feeling against England was especially virulent, the position was no easy one.

The marked antipathy, especially towards the "Englisher", appeared to be actuated by a mixture of hate and fear. Hate, because they see in England a foe whose maritime strength they can never equal, an Empire whose vast overseas dominions and powers of colonising they envy; and fear because they realise that but for General Frenk's so-called "Contemptible Little Army", and the power of our Navy, Paris would probably have



fallen during the early days of the war, leaving Germany free to deal with Russia, and then to exert all her strength against England.

After mobilising with No. 4 Field Ambulance, 2nd Division, we crossed over to France *via* Southampton and Boulogne on the *Armenian*, a vessel since sunk, on the early morning of August 16th, and were attached to the 4th or Guards Brigade.

After 24 hours in a rest camp just outside Boulogne, a city gaily bedecked with bunting, in honour of our Expeditionary Force, we entrained to a place called Wassigny, about 60 miles from Mons, and from there marched in a north-easterly direction by stages towards Mons.

We reached Quevy le Grand, a village about 3 miles from Mons on Sunday August 23rd, the day of the commencement of the battle of Mons, and from there witnessed considerable artillery activity.

That evening Captain Sutcliff R.A.M.C. (one of the officers whose life was sacrificed later at Wittenburg typhus camp) and myself, with 40 stretcher bearers, and three ambulances, were ordered up to the firing line to collect some wounded. The sky was lured from the glow of burning houses, but all was then quiet, for the Germans did not resume their attack till dawn the following morning.

On the 24th at 2-30 a. m. the order came to retire, and the retreat had begun. We retraced our footsteps by forced marches, starting each day before dawn, and reaching our destination late at night. Every available road was full of British troops, and Belgian and French refugees. There was no sign of French or Belgian soldiers. We recrossed the Belgian frontier into France, past the monument commemorating the battle of Malplaquet, which we had noticed on our outward journey two days previously. The days were hot and the nights cold. During the days marching a number of men fell out from heatstroke and sheer exhaustion.

Our ambulances soon became full inside and covered above with the kits of men who were too exhausted to carry their own.



## ***Ten months in Germany.***

During what I saw of this retreat, although hurried, for the hourly halts were reduced and later almost dispensed with, it was carried out in a most orderly manner, and as a German Officer said to me some months later "It was considered the finest retreat in history against such odds."

On the early morning of August 26th, the day following the Battle of Landrecies, we received orders for all our ambulances and personnel to return to Landrecies and attend to 150 Guardsmen who had been wounded in the attack the previous night.

On entering Landrecies I recollect passing a German spy, who was being led off between two sentries to be shot. This man was a German Officer, dressed in the uniform of a French Officer, and I was informed had been attached to the Staff of the Brigade for ten days. I had seen him seated with officers of the Staff at the table at headquarters in Landrecies, where I had been the previous evening to convey two messages.

On reaching Landrecies, we found a large number of wounded collected in a temporary hospital in the deserted town, most of whom were already receiving treatment from part of the 19th Field Ambulance, (Divisional Troops.) Parties were sent out into the town to search for further wounded and a number of lightly wounded were evacuated in some of our ambulances. Whilst these efforts were in progress a party of 50 Uhlans entered the town headed by two German Officers, and drew up at the gates of the hospital. These officers, who were quite civil, came over the two large buildings we were occupying, grasping loaded revolvers and in search of ammunition. Herr Ruttner, the senior officer, stated he was personally acquainted with Sir Douglas Haig, who with General French had been in Landrecies the previous afternoon. He seemed disappointed not to find Sir Douglas there, and desired to be remembered to him.

Sentries were placed at the gates, and we found ourselves exposed.

That day is remembered in my memory. We watched the Germans pass through the town in their thousands, and we yet hoped against hope that our own forces would return and



liberate us ; numerous aeroplanes filled the sky and the sound of gun fire was incessant, for this was the day of Le Cateau. Our captors cheered us by remarking that it was no use letting us go, as they were about to capture the whole British Expeditionary Force, a statement which but for superb generalship would have proved true.

It took us many days to realise we were actually prisoners of war, for under the Geneva Convention we anticipated release as soon as our services were no longer required for the treatment of those wounded we were taken with: but our eyes were soon to be opened.

We remained at Landrecies for three busy days, occupied in operating and treating the wounded under our charge, including a few Germans, and were joined by portions of other captured ambulances.

Most of our riding horses were soon commandeered by the Germans, who further made no attempt to provide us or our horses with food, although we numbered upwards of 300 men. The Officers were however allowed to scour the village, and were fortunate in finding large quantities of biscuits and bully beef which had been left behind by the Guards.

As we were all taken in just what we stood up in, and such as we carried on our horses, many of us were able to replenish our wardrobes by making use of the great coats, cardigan jackets, socks, tooth brushes, etc., left behind by the Guards. Most of the Officers made use of a Guardsman's kit bag, of which there were many.

The day before leaving Landrecies, after representing to the German authorities our limited food supply, we were allowed to catch, kill, and eat two pigs which had belonged to the French inhabitants of the town who had fled.

During these days the Germans remaining in the town occupied their time by looting and destroying anything that took their fancy.

On August 29th we received orders to move with our personnel, ambulances, and as many of the wounded as were able to be moved.



***Ten months in Germany.***

Two Medical Officers remained behind with those wounded who were unfit to travel, and after spending two nights at Bavay, a small town on the way, we reached Mons on September 1st, under an escort of six German soldiers and a Non-Commissioned Officer.

During this march to Mons, we heard the heavy bombardment of the fortress of Mauberge, only a few miles distant where 40,000 French were besieged. We passed many small trenches not more than two feet deep, that had been hastily dug by our army in rearguard actions in the retreat. We realised the German's one aim and object was Paris, for on every sign-post, and on many walls and houses, was chalked up the distance to Paris, and the probable date of arrival there, such as 'Paris 150 kilometres' 'Paris September 9th', and the like.

On reaching Mons, a large well built town of about 35,000 inhabitants, we were paraded three times round the main streets of the city, presumably for the purpose of exhibiting a large batch of prisoners, and as the streets are all cobbled the jolting endured by the wounded men in our eight ambulances must have been agony.

The Belgian populace were most sympathetic, and whenever opportunity offered, thrust upon our men, sandwiches, chocolates, tobacco, etc. Finally we were placed for the night in some very dirty rooms in a large barrack, over a filthy stable, and had to wade through a yard eighteen inches deep in horse refuse to get there; the Germans had thoughtfully removed the planks covering this quagmire, when they saw we were about to enter with our wounded.

The next morning we were separated for good from our wounded and marched down to the station. We found that such kit as we still possessed had been rifled during the night, and few amongst us retained such articles as field glasses or compasses.

After being locked up that day in the Station Master's office, which had been looted and the safes broken open, towards evening we were relieved of all our razors and knives, both officers and men. The officers were then entrained in a very lengthy



train with about a thousand wounded, nearly all Germans, but about 40 British; we were however not allowed to communicate with them in any way. The non-commissioned officers and men, numbering well over 200, we left on the platform at Mons, not to see them again till our reunion on the station at Brussels on June 28th 1915. These men were later that evening sent off to Senalager in cattle trucks.

In the night we passed through Brussels, and in the early morning Louvain and Liege. Louvain was a heap of ruins, not an intact house being visible from the line.

At Aachen or Aix la Chapelle, the first German town, we met with a hostile demonstration at our expense. There was a German troop train in the station at the time of our arrival. The guard of the train thereupon displayed one of our British soldiers' clasp knives, which had all been confiscated, holding it up with the marlin-spike open, he declared that it was with this instrument that the English doctors had gouged out the eyes of the German wounded. A German full Colonel then came up and incited the crowd to murder the English dogs. This behest would doubtless have been carried out had not a youthful German Subaltern come forward and urged his men to return to their carriages, our train fortunately moving off at the same time.

At Dortmund on September 3rd we received our first food from German hands, consisting of a plate of hot soup, and a slice of bread and butter which we ate ravenously; previously our requests for food from the numerous Red Cross women that lined every station, had been answered by a stony stare, or a reply that there was nothing for the 'Schwinehund Englander'. I know of several instances where these Red Cross women, if they did proffer soup, were careful to spit in it first.

On September 4th after a very trying journey of three days practically without food, we reached Torgau, our destination, and were escorted to the fortress of Bechenkopf, a distance of about  $1\frac{1}{2}$  miles by a howling mob hurling execrations at us and the English swine in general. We were none of us sorry when the doors of the fortress clanged behind us.



***Ten months in Germany.***

Our new quarters consisted of a two-storeyed well-built crescent-shaped building, which in ordinary times accommodated German soldiers. There were already a number of British and French Officers present, who seemed very surprised to see 14 Officers of the Royal Army Medical Corps and one Padre enter.

To eat, wash, and sleep, were our first thoughts. The officers were accustomed to mess in relays as there was not room for many at a time, and after our meals which were served by ourselves with no table cloth, those officers below field rank did the washing up of the plates and cutlery at the pump outside; only one plate was allowed for each officer.

Usually each day or night or both, batches of fresh prisoners were brought in, all being in an emaciated condition with several days growth of beard. This continued to the first week in October when the fortress was pronounced to be full. There were then 200 British Officers and over 1000 French, most of the latter being taken early in September at the fall of the fortress of Mauberge.

A 'roster' of orderly officers for the day was instituted, two for each mess. These officers began their duties at 6-45 a.m. by potato-peeling on the square. They would bring the meals over from the cook-house, clear away and wash up after. At a later date a British or French orderly was supplied to wash up for most of the messes. Each officer made his own bed, cleaned his boots, and took it in turn to dust and even scrub the floor, and did all his own washing.

A thorough spring cleaning of each room was found to be necessary owing to the numbers of flies and bugs. These latter were the genuine article, which we killed in numbers. One would become quite adept as the dawu broke in flattening these unwelcome visitors on the wall with the heel of a shoe. When their presence was mentioned to the German authorities, we were assured that the English must have brought them, as there had been none before!

The beds were double deckers *i.e.* one above the other on the same frame, so that the movement of one occupant was certain



to disturb the other. Wooden boards replaced the ordinary springs. A straw palliase and pillow, two good blankets, an ordinary sheet and a sort of double sheet intended to contain the blankets, were provided. These sheets were washed once a month or six weeks by the authorities!

We were allowed to purchase books of the Tauchnitz edition, *i.e.* English novels printed in English and published in Germany. Thus an officers' library was formed, each officer contributing towards it by the purchase of one book. This was a great boon, enabled one to while away many weary hours.

A parade of all officers was held daily at 10 a.m. for the purpose of roll-call, and reading out any orders issued by the Commandant.

For fully six weeks after our arrival, no communication was allowed with the outside world, and we realised that most of us must have been reported missing if not killed, which proved to be the case. We welcomed therefore an application early in October from the Commandant, asking us to subscribe to the German Red Cross. Most of us had remembrances of the malicious treatment we had received at the hands of this Red Cross during our journey through Germany, and were naturally not over inclined to add to its bounty, but we saw through this a means of getting our names home. So we said we had no money to subscribe in cash, but were willing to write cheques for an amount. This offer after some demur was agreed to, the exchange taking place through a Dutch Bank. Few of us had retained our cheque books, so cheques in the majority of instances were drawn on an ordinary sheet of paper, and in my own case I put at the back of my signature, to my agents 'please notify next of kin' and 'not negotiable after one month'. These cheques were home in less than a week, and were in many cases (over 70 per cent) the first intimation that our people had at home that their husbands or sons were alive. So we considered that our ten marks, the value of most the cheques, were well spent.

About two weeks later, we were first allowed to write, special post cards being provided, beginning 'I am well and a prisoner of



war' and allowing space for four lines to follow.

Towards the end of October, the first letters were allowed to filter through from home, though many officers received no letters until well into November. The first parcels were received in November, and for some weeks heavy duty was charged; later this duty was cancelled and parcels came through fairly well. I myself received a large parcel of food on an average once a week, from January to my departure in June.

During the last three or four months of our captivity, we lived almost entirely on our parcels, for the German food is of very poor quality as well as scanty. We were thankful for this continuous influx of parcels for our unfortunate prisoners, and without it I fear many of the rank and file would have starved. Now it is worse than when I was there.

Parcels were always censored, and in many cases some of the contents would be removed or a tin of tobacco would be half emptied of its contents. Later, tobacco was altogether prohibited, as also books, under the pretext that political matter was being sent. Cakes were always broken in half in case forbidden articles should be concealed in them. So suspicious is the German nature that occasionally tins of sardines or Swiss milk would be opened, with the result that the contents would mingle freely with the other items of the parcel.

As the winter came on at Torgau, where we had snow in November, we were provided with coal, usually sufficient in quantity if eked out with care, but sometimes no coal would be distributed, and one would sit and freeze in a great coat. At Torgau, coal was usually distributed on alternate days at the coal cellar, and it was the custom for officers to stand in a queue with their empty coal bins awaiting the pleasure of the German non-commissioned officer. All ranks, even Majors and Colonels, British and French, took their turn in the acquisition of coal, and then carried the bins back to their rooms.



There was a canteen where tobacco, chocolate, German sausage, under-clothing, and even white bread could at first be purchased, but nearly all these articles were prohibited during the first three or four months. The sanitary arrangements were most primitive and extremely odorous, and swarms of flies pervaded the barracks. The joint complaints of British and French medical officers resulted in considerable sanitary improvements. In the men's camps the same primitive arrangements existed. The English soldiers were usually the ones especially picked out for latrine work.

The first Commandant at Torgau, a man with the sentiments of a gentleman, resigned his position soon after our arrival, and was replaced by a man of very different stamp. This officer was a virulent Anglophobe, and was the author of a number of uncivil letters to the senior British officer. The following is one example:—

“Every day applications from British Officers reach me, which are so entirely without justification, that it is not worth my while to take any notice of them. Officers appear still not to realise the fact that, as prisoners of war, they have not so much rights as duties. If this state of things, which betrays a certain bumptiousness on the part of British officers, does not cease, I shall take the opportunity to put into each room, a French Sub-Lieutenant risen from the ranks, and I shall further apply that a certain proportion of your Allies the Russian Officers may share your rooms.”

“This order of mine is to be posted up in the British quarters. Will you please, Colonel, report to me in German the fact that these instructions have been obeyed.”

(Sd.) BRAUN, CAPTAIN,  
*O. C. Prisoners, Dept.*

What these applications complained of were I do not know, and they were not likely to have been unreasonable,



for nothing was submitted to the Commandant except through Colonel Gordon, the senior British Officer, who was very particular as to anything he passed on. Possibly they referred to one of several applications, put forward by the Medical Officers to be returned, in accordance with the terms of the Geneva Convention.

It was about this time that a request appeared in the local Torgau paper for dogs to protect the sentries from the barbarous prisoners of war. The following is an extract:—

“Already hundreds of thousands of prisoners of war are in Germany. It is expected that there will be hordes more coming. Large numbers of troops have to be called out to act as guards, and heavy claims are made on their powers of endurance and resource. Moreover as the experience of the years 1870—1871 teaches, the guards are exposed to malicious and sudden attacks, the danger is greater than at that time on account of the bitter hatred and spiteful temper of the enemy. Our brave guards will certainly not shrink from the strain, and will courageously face the danger. We, however, can lighten their task considerably and reduce the dangers to a minimum, by furnishing them with dogs to accompany them and defend them. The following breeds serve best as watch dogs:—Sheep dogs, Yorkshire Terriers, Airdales, Deer hounds, Great Danes, Bull dogs and other Hounds. They must be strong powerful animals of at least a year old.”

From the ferocious looking hounds that thereafter appeared, I have no doubt that the latter contingency was complied with.

GOLD. Within a month of our captivity, the Germans ordered all gold coin to be given up. This order was especially directed against the French Officers, as it was known that the treasury at Mauberge, containing half a million francs,



had been emptied before surrendering, by giving each Officer a year's pay in advance. In answer to this order for gold, a fair amount was given in, but the majority was concealed, with the result that numerous surprise searches were instituted. A German non-commissioned officer and two or three rank and file would suddenly come into the barrack room, and select three or four officers for systematic search through both his person and belongings. One Frenchman had a number of Napoleons confiscated for concealing them in a pot of jam. The unusual weight of the jar and the dark shadow seen in the middle of the jam through the glass, gave it away, with the result that this French officer was 25 Napoleons the poorer. Various other devices were resorted to for concealing gold, for at the best one would be credited with 20 marks in German paper for a sovereign if given in, and more often only a valueless receipt was given.

In my own case I secreted with success four sovereigns and two Napoleons, one under each star of rank on my coat sleeve. This hiding place was never suspected!

Different orders were in force in different camps. At one, no money over 20 marks was permitted; at another, only metal discs in lieu of money were allowed; at a third, there was no limit on German cash in hand.

Captains were paid 100 marks a month, approximately £5; Subalterns 60 marks. Out of this, one had to pay messing, about  $1\frac{1}{2}$  marks a day without extras. Towards the end of our sojourn the medical officers were given the full pay of their equivalent rank in the German Army, and just before leaving Germany all arrears were paid up, so that I, personally, left Germany carrying notes to the value of 5000 marks the nominal value being £250, but actually not worth £200.

The War Office at home very considerably relieved us of these notes at the normal peace time value, *i. e.* 20 marks to a sovereign, and we understood that this German paper was to be used to pay German prisoners on their release,



thus frustrating the evident designs of the German Government to get rid of German Paper in exchange for English gold or English notes.

At the end of November, after barely three months residence at Torgau, the order came that all the British officers were to be removed to Burg, near Magdeburg. We were most of us sorry to move, for we had settled down at Torgau, and moreover had ample ground to exercise in, and we felt, which proved true, that we might go further and fare worse. During our journey to Burg we received much the same greeting from the civilian population as we had done three months previously on our way to Torgau. On arrival at Burg, it was given out that we were a batch of 200 Officers taken just recently amongst a large number of prisoners at Dixmuiden. We had all to carry our own kits including our boxes of 'Mess Plate'; the latter were packed in wooden boxes, one for each mess, and consisted of a knife, fork, spoon, plate and mug for each officer. Several of these boxes had to be left on the road, when marching on our way to the Laager at Burg, and several officers, a Colonel amongst them, received constant reminders from the sentries in the shape of 'prods' from the butt ends of their rifles, if owing to their loads they were unable to march at the set pace, no transport being allowed.

On reaching our Laager at Burg, all the Irish Roman Catholics were ordered to stand on one side. These officers were then separated and were allotted the best room in the Laager, and the inmates were not subjected to being searched or being mixed with others. Each Irish officer then had a private interview with the Commandant, who offered them severally a commission in the German Army, if they would become traitors to their country. This was a genuine offer in all seriousness on the part of the Germans, showing the very erroneous ideas that are held. Needless to say no answer in the affirmative was received from any of these officers, 20 in all.

Questions of a similar nature were I believe asked at each camp throughout Germany, both from officers and men.



Our quarters at Burg were much inferior to those at Torgau. The rooms occupied by the officers were converted stables, and stores for guns and artillery. There was very considerable overcrowding both in the dormitories and in the exercise ground. There were 500 prisoners, all officers, incarcerated here, including British, French, Russian, and Belgian. The day before our arrival, a large number of Russian officers had been removed, especially those from the crack regiments, so that they should not associate with the English. Our space for exercise was very limited, being only about  $160 \times 30$  yards. It was even only possible to walk on the outside edge of this space, for inside was a morass. The latrine was directly under the windows of several of the rooms. This laager was condemned as such in the spring of 1915, after a visit from the American Ambassador.

An "appel" would sound once or twice a day, at irregular hours when all officers had to hurry to their respective rooms. The door would then be locked, and a sentry posted outside. Presently each room would be visited by a non-commissioned officer, or the Assistant Commandant, or even the Commandant himself; we would then be counted or searched, or informed of new rules, as the case might be. There was one such sentry, an Alsatian, and by blood and inclination a Frenchman. On several occasions he cheered us by narrating items of news favourable to the cause of the Allies.

In one of these tours the Assistant Commandant took infinite trouble in separating those of the same nationality and mixing the Allies. The British, of all the Allies most fond of fresh air, had occupied the beds near the windows, in order to get as much fresh air as our Allies would put up with. By the Commandant's orders, there was a "general post" in each room the beds being occupied as follows:— Russian, Englishman, Frenchman, Belgian, and in no case were two officers of the same nationality to occupy adjoining beds. This did not cause the friction and discomfort that our captors looked for, and at any rate increased our opportunities for making ourselves familiar with the languages of our Allies.



### **Ten months in Germany.**

This forced mixing of the Allies, which took place in all the prison camps throughout Germany, by an order from Berlin, was in a number of cases the direct cause of the spread of typhus fever, for this disease is always endemic in Russia, and spread rapidly amongst the Allies in a number of the men's laagers.

For news we had to be content with that contained in the German papers, which were usually allowed. English papers were strictly forbidden, although later, when parcels were frequent, scraps of newspaper would occasionally come through, that had been used for packing in parcels. Our captors from time to time supplied us with such gratuitous information as "London was in flames" or better still "the Irish fleet was bombarding the coasts of Scotland," which made us smile. A Zeppelin paid a visit to the camp one afternoon, circled round, and called out "En route for London".

A paper known as the "Continental Times," issued since the war, printed in English in Berlin, supported by the German Government, and initiated for the Americans in Germany was freely distributed to the British prisoners of war. This paper contained from start to finish a mass of abuse against Great Britain, and at times afforded us very considerable amusement to read. Our financial status was the subject of several virulent articles.

One of the few advantages of Burg was that there were three baths in use; for at Torgau there had only been a shower bath. In fact one of the Standing Orders at Burg ran as follows:— "Every prisoner *must* take a shower bath once a week in the room provided, under the supervision of a non-commissioned officer. The use of the bath is regulated by the Officer Commanding the Garrison."

Monday was the day allotted to the English, and during this day there were few moments when these baths were not all occupied. By gentle bribery of the bath non-commissioned officer, it was sometimes possible to obtain a bath also on some other day of the week, for on those days allotted to our Allies, the Russians and French, there was not the rush that obtained on the British day.



Divine services were held every Sunday in the impromptu Chapel, by the Padres of the various denominations, A German interpreter was always present to listen to the proceedings. Singing was only permitted in Chapel, and many of us enjoyed the opportunity of hearing the Russian Officers sing, for most of them had very fine voices and sing in perfect harmony.

On January 12th 1915, the order came that all the Medical Officers at Burg were to be moved to Altengrabow. This was the result I think of a general order throughout Germany with reference to Medical Officers being removed from the Laagers occupied by combatant officers, and posted to men's camps. It resulted I believe from representations by the American Ambassador, that Medical Officers were being detained unnecessarily, and certainly such was the case, for from the time of our arrival at Torgau until January 12th, the Medical Officers had been idle. Now however, we were to see a large men's camp. For at Altengrabow, near, but on the other side of Magdeburg, there were 24,050, prisoners, composed as follows:—

|          |     |     |     |        |
|----------|-----|-----|-----|--------|
| Russians | ... | ... | ... | 10,000 |
| Belgians | ... | ... | ... | 8,000  |
| French   | ... | ... | ... | 6,000  |
| British  | ... | ... | ... | 50     |

They occupied two large camps connected with each other, and surrounded and intersected by barbed wire. The prisoners were housed in wooden barracks, about 150×30 feet, roughly put together, with tarred felt on the roof. The floor was mother earth: there were six or seven windows along each side, and each so-called barrack accommodated from 150 to 250 men. During the winter many of these huts leaked very badly. There was a stove on one side of the barrack. No beds were provided, but the majority were supplied with straw palliases. The atmosphere was often indescribable.

The Medical officers were housed in an officers' barrack about 200 yards from the camp, and had a pass to go to the prisoners' camp. This barrack was always guarded by a sentry. We



occupied the same quarters as a number of French, Belgian, and Russian Medical Officers. Three officers were apportioned to a room that in ordinary times was occupied by one German Officer. Spring beds were provided for most of us, and in many ways the Medical officers reached the nearest approach to comfort since being taken prisoner.

It was at this camp, Altengrabow, a station of some importance and a mobilisation centre for a Division, that one had the opportunity of observing the type of man that was being drawn upon to cover the ever increasing needs of the military.

Those German troops we had seen at Mons, struck one as being a very efficient body of men. In March 1915, the recruits of the 1916 class were called up, and we had the opportunity of seeing several thousands of these men. They were very young, and by no means full grown, but gave the general appearance that in time the majority would make efficient troops. There are half a million of these fresh recruits that reach the age of enlistment per annum, and they receive six months training before being sent to the front.

Secondly, there was the soldier who was obviously unfit, and in some cases actually deformed, who had presumably been accepted by the medical authorities as the needs of army increased.

Thirdly, there was the Landsturm, usually a fine body of men, but in whom the vigour of youth was obviously lacking.

Fourthly, the sailor; for from April to June 1915, two thousand naval men and marines, in this station alone, underwent one month's *military* training, before being sent to the front. These men, especially those of the Navy are the cream of Germany. They are almost without exception, fine healthy looking men, they are young, their physique is good and mentally they bear the stamps of education, and give the appearance of being drawn from quite a different class to the ordinary military recruit. These men naturally did not appreciate being withdrawn from the Navy to fill gaps in the Army, and



we were informed that they were to be placed on the western front against the English troops, surely a compliment to the efficiency of our own men !

As there were only about 50 English prisoners in this camp, the English medical officers were told off to assist in the treatment of Russian prisoners. This we carried out with the aid of interpreters for six months, treating also as many of our own men as needed it.

HEALTH OF THE PRISONERS.—My experience of the health of the prisoners has been more favourable than that of some. Every prisoner was forced, and rightly so, to vaccination, and inoculation against typhoid and cholera. At Altengrabow, being a military centre, this order was probably quite as much for the German's own protection as for the benefit of the prisoners.

I saw no outbreak of typhus such as we have recently heard about as having occurred at Wittenburg. I would like here to refer to the statement made by Sir Edward Grey in the House of Commons on May 2nd last. He informed the House that "from notes received from the United States Ambassador in Berlin in April and May 1915, typhus fever was present in fourteen separate prisoners camps, Altengrabow amongst them; and that owing to typhus, the United States Embassy was prevented from visiting and inspecting these said camps." Now I know for a certainty that no typhus fever was present in the camp at Altengrabow during the period stated, thus the Germans appear to have deliberately added to the list of typhus infested camps, presumably with the object of preventing the camps being inspected and reported on by the American Embassy; for neither the Ambassador nor any emissary from the Embassy visited the camp during the six months that I was resident there.

Arrangements for washing existed, and soap was procurable. Vermin was however prevalent especially amongst the Russians. There was a small outbreak of Cerebro-Spinal Meningitis or Spotted Fever in Altengrabow, but measures were immediately



taken to prevent its spread, perhaps especially stringent owing to the thousands of German troops quartered in the station.

There were over four hundred cases of a disease closely allied to Beri-Beri, caused probably by the fact that all food, soup, vegetables, etc., was boiled in large sealed stock pots under pressure: a process which is said to remove some essential ingredients, the absence of which predisposes to this disease.

A number of barracks were set apart as hospitals, and beds were provided for a few of the really serious cases. Drugs were supplied, usually in sufficient quantity, though the varieties of drugs at our disposal were very limited: in special cases however it was usually possible to obtain unauthorised drugs.

Tuberculosis was always with us, especially among the French, who revel in the odorous atmosphere of an unventilated barrack. Two barracks were set aside for the treatment of these cases. At Altengrabow with its 24,000 prisoners, there was an average of nearly one death a day from all sources. Military funerals were not permitted. I met with no disrespect to the dead from the inhabitants.

The food supplied to the prisoners of war was never good. During the first month of captivity it was possible to purchase at the canteen white bread and small cakes made from flour. This was then stopped, and brown bread only was obtainable. This "Kriegsbrot" or black bread progressively deteriorated as months sped by. It contained 25 % of potato, was heavy, close and moist, and extremely likely to cause indigestion. It somewhat improved on keeping, but was liable to become mouldy. Up to February 1915, prisoners were allowed to purchase this bread at the canteen; after this date, each prisoner was apportioned a definite quantity, which could not be exceeded. It was supplied on alternate days. The ration for the officers was more than sufficient, but that supplied to the prisoners in the men's camps was insufficient in quantity and of very poor quality. This apportioning of the bread was not only confined to prisoners, but was a general order throughout Germany, even for the German inhabitants. Tickets were supplied by the Police, and



on presentation of this ticket the allotted portion of bread could be purchased.

The meat ration was small but usually edible. It consisted on four or five days of the week of pork. The other days brought a beef ration, or more usually horse flesh; the latter if well cooked and not too tough was quite palatable.

There was always a liberal supply of potatoes, and often a portion of sauer-kraut, a very unsavoury dish made of cabbage and vinegar. The mid-day meal was always preceded by soup of varying quality and flavour. The evening meal varied at different camps; usually a plate of soup or a small piece of German sausage, or a slice of bread covered with a wafer of cheese, or again, a raw herring with no facilities for cooking it. The Russians devoured these fish raw !

Breakfast usually consisted of a cup of so called coffee, made from acorns in place of coffee beans, and a slice of bread with a thin scrape of margarine over it, or a little jam, a " melange " or a mixture with no very definite flavour of fruit in it.

The men did not fare nearly so well. They started with a cup of coffee for breakfast. For mid-day dinner, they had a bowl of soup mixed with vegetables and potatoes, and a few steaks of meat, merely a " suggestion ", and for supper, soup again, but of a much weaker consistency; besides this each man had from six to eight ounces of a very coarse variety of " Kriegsbrot ". At times it was possible to buy a few extras from the canteen, but the men received no payment from the Germans, and therefore unless money was sent out from home, the wherewithall for the purchase of extras was wanting. Money came through with difficulty. I myself had £ 5 sent out to me in November 1914, and I did not receive this till May 1915, until I had written two carefully worded letters to the American Ambassador about it.

The sentries in the various camps were usually drawn from the Landsturm, or from those who are unfit for active service, or thirdly from those who have seen service, but are temporarily employed on light duty as a result of wound or disease. They are as a rule a surly body of men, who have little sympathy for the



***Ten months in Germany.***

prisoner of war, and especially for the "Englander". One's morning greeting from both German officer and man was usually 'Gott Strafe England'.

On one occasion 'Gott Strafe England' has been chalked up on the notice board by one of the sentries; to which one British wit added "For we Can't." This had the effect of causing the notice board to be removed! Presumably the idea of limiting the supply of cash that prisoners are allowed to have in hand, is to prevent bribery and corruption of the sentries. It is said that a German can be "brought" from the General downwards: this is a sweeping statement, but it is true so far as the lower rungs of the ladder are concerned. Through judicious bribery we were enabled before leaving Germany not only to purchase a camera which is strictly forbidden, but also to take several photographs of the conditions prevailing within the camp. Moreover alcohol, which in any form was prohibited, used to find its way into the camp.

**SALUTING.** To see the hand at the salute, always flatters the vanity of a German: but the German salute is different and more prolonged than our own. It is the custom in Germany for every officer and non-commissioned officer to receive the salute from one of inferior rank. Thus every officer salutes every officer, and every private salutes every officer and even every non-commissioned officer. It was required of all officers when prisoners of war, firstly, to salute every German officer even though he should be at a distance of nearly 100 yards away. Secondly to repeat the salute on each occasion should you meet him even three or four times within five minutes, and thirdly to give a sustained salute.

As rank disappeared according to our captors, for so long as we were prisoners of war, so a General, if a prisoner, would be required to salute a German Officer of the rank of 2nd Lieutenant. For infringing this rule, or rather for not standing to attention whilst being addressed by a German 2nd Lieutenant, a French full General was awarded by the Commandant at Burg, a punishment of three days cells in the town detention barracks. On



reaching these detention barracks, I am glad to say the officer in charge was somewhat surprised at such treatment, and wired to the General at Magdeburg for confirmation. The order was then cancelled, but not till after the gallant General had had one night in his cell. On his return the following morning, all the prisoners assembled and expressed their pleasure at seeing him again. One French Captain was indiscreet enough to cry out "Vive La France" with the result that he was awarded three days cells, a punishment that was not rescinded.

One's salute would generally be acknowledged, but on many occasions, especially to British officers, the salute would be purposely entirely ignored, or the German officer would intentionally turn his back as you were about to salute and then would be informed, by any non-commissioned officer or private near, if you had omitted to salute the said officer's back, which would cause vials of wrath to descend on your head for the offence. A Captain of the Royal Army Medical Corps was on one occasion struck by a German soldier because on coming out of a prisoners' barrack he had not noticed, and therefore had not saluted, a German Lieutenant who stood near talking to a group of non-commissioned officers.

**PUNISHMENTS.** Small offences resulted in punishments of varying degrees. For the men, the favourite punishment was to tie the offender to a post for two hours. In winter, this might mean standing in a foot or more of snow, and being unable to move; and in the heat of the summer in the same position without shade. This punishment was often varied by making the soldier stand on a big stone while he was being lashed to the stake, and then kicking the stone away, leaving the man in a half crucified position. Other penalties were cells and prison, often with solitary confinement. Officers were ordered prison cells for punishment. On one occasion fifteen British officers were awarded six days cells solely for playing football with a loaf of black war bread.

The prisoners were made to work in the district, at road making, agriculture and general town improvements. Horses



were almost an unknown quantity, and prisoners were utilised to draw wagons and carts, twelve to twenty men for each wagon. Russians were mainly employed for this purpose, and it was a truly pitiable sight to see those human derelicts wrapped in a blanket, without overcoats, and often without boots, tramping along in the depths of a German winter.

The Russians of all the prisoners were the worst provided for, for over 60 per cent of them are unable to read or write and therefore few of them receive letters or parcels. Few had any money, and if when they were sweeping round our barracks, we could pass out a few crusts of bread, away from the eye of the sentries, such was their hunger that often a free fight would ensue.

Few of the Russians had any overcoats, for on being taken prisoner, the Germans had taken their overcoats to act as blankets for their horses.

**AGRICULTURE.** I was much impressed in those parts of Germany that I had the opportunity of seeing, *i. e.* Westphalia and central Germany, by the extent that the land was under cultivation for grain.

Truly the Germans are a wonderful nation for foresight. In every open space, in every cottage garden, even in undulating country, grain is grown in divers varieties. In fact, on our return journey in June 1915, I saw large woods and tracts occupied by sylvan growth, being cut down, for the purpose of, so we were informed by our guard, providing additional space for planting grain.

The 1915 crop was very seriously affected by a complete drought over the whole of central Germany of three months duration, from the beginning of April to the end of June 1915. Many of the crops were thin, of stunted growth, and prematurely ripened, and I was assured by those capable of judging, were quite 50% ruined.

In Altengrabow, the drought was so marked that well established trees of several years growth withered. The corn was I believe damaged further by very heavy rain in the first week of



July, just after our departure. The harvest of 1914 was reaped chiefly by old men and women. In 1915, prisoners were also utilised for this purpose.

There is then ample evidence from all sources, of the ill treatment of many prisoners during the early months of the war, but now in most prisoners camps, the American Embassy has been able to advise and to see carried out, many radical changes for the better.

Before leaving Germany, I had the opportunity of speaking to several Canadian prisoners, who were taken at Ypres in April 1915 during the first gas attack, and they had few complaints to make from the time of their being taken prisoner to the date of their internment in the Kriegsgefangenen Lager.

Moreover prisoners have in many cases received good and careful treatment whilst actually in hospital in German hands. One youth told me he had four separate operations on his jaw and face for the repair of fracture and deformity.

On the other hand, food, which was not specially bad at first has deteriorated both in quality and quantity, and as food becomes more scarce in Germany, this is likely to increase.

The German rank and file have implicit faith in the ultimate victory of Germany. I met with only one enlightened German private—a sentry who had spent some years in England. He asked us one afternoon "How would England divide up Germany after the war". The question was *bona fide* with us touch of sarcasm.

I have been asked on many occasions since my release, "did I meet any nice Germans, or make any friends amongst them?" I can truthfully say, no, not one. The *status belli* seems to have so altered the state of mind of the German people that their hatred for Great Britain is almost a monomania. A German will prefer to speak to you in indifferent French, rather than speak in English, though he may be a passed-master of the language. Of German "Kultur" I saw no sign.



***Ten months in Germany.***

They have no sense of humour, and never lose an opportunity for petty insult and annoyance.

There organisation is marvellous. Everything is thought of, nothing is left to chance. Some weeks before our exchange took place, the Germans went to the trouble of taking down minute details with reference to each of us; the colour of our hair and eyes, appearance, age, height, etc. and a minute inventory of our belongings, even down to the number of handkerchiefs we possessed. No 'mufti' was at any time allowed.

On May 28th 1915, we had news that our exchange was imminent. It was not however till June 26th that we finally left Altengrabow. Of our return journey I have nothing to complain of. Our captors evidently wished to leave a good impression on us had such been possible. At Brussels on June 28th there was a general reunion of medical officers and personnel and also an exchange took place of gravely wounded officers and men. Two combatant officers only were exchanged, and of the 250 badly wounded men who travelled all the way to Brussels from Germany for home, only 125 crossed the channel; the remainder were taken back again into Germany as not being considered badly wounded enough for exchange: a disappointment, the magnitude of which it must be difficult to grasp by those who have not been in captivity. Amongst those that were passed, there was not a single non-commissioned officer, even though such was minus a limb, and useless for further service.

At Brussels we were supplied with a free meal at our captors' expense, and were severally asked if we had any complaints before leaving the country; few, however availed themselves of this invitation, as if any definite complaints had been lodged, the complainant would probably have been detained, pending enquiry, and possibly lose his chance of exchange.

We received a splendid reception at the first station in Holland. We were officially received by the military and the platform was crowded with ladies and friends, pressing on officer and man, fruit, tobacco, etc. The following morning we crossed the



channel to Tilbury Docks, in the *Oranje Nassau*, under the Dutch flag.

The above brief narrative may give some idea of the life of a prisoner of war, but it cannot convey the appalling sense of *ennui*, depression, and hopelessness, generated by captivity.

Freedom is really one of the greatest assets we possess yet how few of us appreciate its value until it is too late.

It will indeed be a red letter day for those many thousands of prisoners, when they reach the shores of their native land after so prolonged a sojourn in a hostile country.

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***After the lecture the following remarks were made:—***

MAJOR P. DWYER, R.A.M.C.—I have listened with the greatest interest to the story told by Captain Routh, interest not the less keen because for a time I shared his experiences.

The task of the medical officer in the field is at all times difficult and dangerous, but doubly so when he has to attend wounded in the rear of a closely pressed and rapidly retreating army; when duty calls upon him at once to go and to stay, and sometimes even deliberately to choose the weary months of suffering you have heard described. It was in such circumstances that Captain Routh, and a number of other officers and myself, were captured at Landrecies in the early days of the Retreat, but while the others were sent at once into Germany with all the wounded fit to travel, two of us were left behind at Bavay, 10 miles south of Mons, where we attended the British, French, and German wounded in the local French Red Cross Hospital. After a fortnight at Bavay we also were warned to proceed the following day into Germany, when we at once decided to put into action plans already made for our escape. We left Bavay at 1 a. m. the following morning, making our escape from the town by devious routes and little known passages, and after many hazards and adventures, we arrived at Dunkirk, having crossed



the entire line of communications of the German Army between September 11th and 13th.

During our fortnight at Bavay we saw much of the Germans, for not only was Bavay on one of the great arterial routes for German reinforcements, but it was also the headquarters of the division besieging the fortress of Maubeuge, only six miles distant.

I have nothing but praise for German discipline and organisation. At no time did I hear of outrage, nor did I ever see a drunken brawl. All foodstuffs and bakeries in the town were commandeered, but a regular issue of rations was made to the inhabitants. Their billeting arrangements appeared to be perfect, and, for the size of the town, very large numbers of troops passing through were sheltered with a maximum of comfort and but little disturbance to the inhabitants. The town was early posted with orders regulating the conduct and movements of civilians; during our escape we saw posters similarly worded, indicating that the occupied territory was already divided into districts each with its own Commandant, and there was every reason to believe that these notices were ready for issue long previous to mobilization.

I have many pleasant memories of my stay in Bavay. The local hospital was excellently equipped and over one hundred wounded were treated there, about twenty being British, the remainder French and German. The nursing was in the charge of the local ladies of the French Red Cross, and at this distance of time and place I would fain pay a respectful tribute of admiration to the patient skill, devotedness, and courage, with which they nursed friend and foe alike. The German General of the forces besieging Maubeuge visited the hospital almost every day, and chatted freely with the German wounded there; but although he spoke French and English well he had never a word for the others. We once made a verbal application to him to be released, but he told us not to worry, that the war would be shortly over, that Paris had already fallen, the British Army was surrounded, and he would take Maubeuge that day. We rather earned his



displeasure by retorting that he knew but little of the British Army; yet it almost seemed that his words might hold some truth, for Maubeuge surrendered the following day, the 7th September 1914, and the thunder of the German siege guns troubled our ears no more. It was a fact worthy of note that during the siege the German gunners invariably ceased firing at noon to recommence at one o'clock each day; apparently nothing could be allowed to mar the quietude of the mid-day meal. Towards nightfall on the day that Maubeuge fell some seven thousand Germans assembled in the great square of Bavay to celebrate the victory. For hours they sang in wondrous harmony the songs of their native land, and sadly enough I listened in the shuttered darkness of my room to the melodious swell and flow of their triumphal chant.

Captain Routh's story is another proof that the Germans in this war have set themselves above and beyond every dictate of humanity, and have disregarded every convention devised by civilization for the lessening of sufferings inseparable from war. But his story also proves that the spirit of those prisoners remains unbroken, and that through months of anguished waiting their eyes, unclouded by their sufferings, are ever turned towards the certain dawn of our common victory and their deliverance.

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## **"TRENCHES AND BILLETS IN FRANCE."**

BY

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Before the present great war, the ideas of two huge armies facing each other in a continuous line of trenches, and of trench fighting as we have come to know it, were "not dreamt of in our philosophy." We had been accustomed to think of the rapid concentration of troops at certain points of vantage, having ever in mind as an example the Franco-Prussian war of 1870; of battles lasting perhaps for a few days, remembering always the Russo-Japanese war in this connection; of complete investments of fortresses, such as occurred at Metz, and, more recently, at Port Arthur; and of hasty entrenchments, perhaps of sufficient depth to give cover from shrapnel fire, but certainly not to be used as permanent earth works by the entire fighting armies. But now all our preconceived notions have been changed. Rapid concentration of troops does indeed now take place. But the movement is invariably made known to the hostile commanders by aeroplanes, if by no other means, and he acts accordingly, with the result that the attack does not come as a surprise to him, and he is able to meet numbers by numbers equally as large. To be sure these conditions did not obtain, so far as we were concerned, until many months of fighting against great odds had been passed. But the quality of "sticking it" and the excellent musketry of the Old Army enabled us to make good to a large extent, the disparity in numbers, until the New Armies were in a condition to take their places in the line, and to make the contending forces in respect of numbers more equally matched. Our beliefs as to the duration of battles have been entirely falsified. Battles now do not last for days, but for weeks and even for months. The first battle of Ypres was an indication of what was to be expected, and the



experience then gained has enabled the French to withstand the German attacks at Verdun for months. In such long spells of fighting, troops must be continually changed, and so man power after all is to be the deciding factor in the present great struggle.

In no case in the western theatre of war,—excepting perhaps Maubeuge—has a fortress been completely invested. Fortresses have fallen, certainly; Liege, Namur and Antwerp were fortresses. But the stories of Metz, Plevna and Port Arthur have not been repeated, and fortresses as such have had to give place to elaborate systems of earth-works, which have proved not so readily capable of destruction by the heavy artillery nowadays employed to reduce them. Previous to the war we knew for the most part two kinds of trenches. The first kind was hastily constructed by infantry advancing in serried and well-ordered lines. Each man dug as much as he could with his entrenching tool while lying down, and if the ground were suitable he might expect to have two or three feet of earth in front of his face before the order came to him to advance or retire. The second kind of trenches we had experience of were those dug in defensive positions. They probably had head cover, were of the average depth of from five to six feet, and were provided with a fire step, a berm, and small traverses. Communication trenches led back—properly zigzagged—to some distance. As we always liked to have our defensive positions on rising ground so that we could see, the communication trenches probably extended about a quarter of a mile—if as much—to behind a hill, where they perhaps ran into a support trench and very likely so ended.

But trenches now are of a very different kind, and of much more solid construction. They are deep, and sufficiently wide to admit of men passing one another in them. They have anything up to twenty feet of earth between them and the enemy, and rows upon rows of sandbags are used in building them up and in concealing the defenders. They have no



berm. The fire step is like a bench, and is made either of sandbags or of wooden planks and on the floor of the trench are laid "duck boards," which may or may not, according to the weather, enable one to keep the feet from slipping in mud, and so to prevent progress from being very nearly an impossibility. In many of the traverses recesses are cut in which are kept stored in boxes the bombs and ammunition for the front line. Still more frequent and larger are the recesses cut out in the parados to make "dugouts." Many are most elaborately constructed, and the best and more roomy of them are used as officers' quarters and messes, and by the signallers. In many cases wooden beams, and doors or corrugated iron, are used to support the roof, and windows are cut and covered with gauze or muslin to keep out the flies and other unpleasant insects which abound. Some "dugouts" on the western front lie many feet below the ground line, and their inmates are secure from all kinds of rifle and shell fire, excepting high explosive, and, of course, from mines.

At intervals along the front line are to be found strong machine gun emplacements. Every effort is made to render them as strong as possible, and to lessen the risk of detection the machine guns in them are usually fired only at night, and in an oblique direction, unless it becomes necessary for them to be used to repel an attack by day. Every care has to be taken that the flash of a gun on discharge does not give an emplacement away, for if its whereabouts are detected the hostile artillery are sure to pay it most unwelcome attention. Machine guns play a much greater part than was ever anticipated by us.

At the beginning of the war the Germans used them tactically to much more advantage than we did. As a simple illustration, of the use they made of them may be mentioned the V-shaped trench, which they would dig at night be-

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NORR.—But is this so? It was the British Army who first discovered the value of machine guns and it was *our* enthusiasm, during the South African campaign, over the great future for machine guns that led to their adoption by the Germans.—Ed.



tween the lines. This trench was narrow and was quite shallow. The angle at the point of junction of the two arms was not very acute, and when the attacking infantry reached and occupied them, imagining they had captured some part of the German line, machine guns placed at the ends of the arms came into play. As likely as not scarcely a man came out of the trench unhit. The machine gun is as demoralising as it is deadly, and it is comforting to know that we are as well supplied with them now as are the Germans. Indeed it is probable that we have even more than they.

Machine guns are not only kept in the front line. Emplacements for them are cut in communication trenches and keeps, and an advance against them along the portion of straight trench they command spells annihilation. They are also used from further behind the line for indirect fire—for example to enfilade a road,—and the near approach of an aeroplane belonging to the opposing side is almost invariably signalled by the regular and rapid sound of the discharge of a machine gun in its direction. The German machine guns fire fewer rounds to the minute than do ours.

The loopholes used are of various kinds. The steel one with a small shutter is perhaps the most popular and the most universal. Others are made from long "boxes," which are let into the parapet, and many and various are the devices improvised for opening and shutting the flap at the enemy end of it, so that daylight may not be seen through it and the place so become dangerous. Behind most loopholes for the same reason hangs a screen of canvas made from a sandbag; and before the loophole is opened, the sniper is always careful to see that this curtain is well down over his shoulders. The "high command" trenches of France make loopholes possible, whether this is the case in Mesopotamia I am unable to say; but one may gather that the Turkish trenches, any how, are "low command" and for the sake of invisibility the ground line is the line of fire. To conceal their loopholes the German use sandbags of a variety of colours,—black and



red mingling with the better known dirty drab,—rendering steel plates or other kinds of loophole most difficult to detect. In fact, if an apparent loophole be visible, it may almost certainly be considered a “dummy”. The Germans are quick at “spotting” a loophole, and usually make very accurate shooting at it. When this happens it is time to make another elsewhere. A favourite device of theirs is to fire continually at one portion of a suspected spot with a machine gun, until the sandbags become riddled, and bullets succeed in making their way into the trench. When attacked, infantry fire over the parapet, and loopholes are chiefly used for sniping or for occasional shooting.

The wire in front of the parapets has to be watched continually, lest an enemy patrol should cut it. To prevent this, where possible patrols are sent out at frequent intervals during the night, who search thoroughly among the long grass for any signs of an enemy, in which task they are both assisted and hampered on dark nights by the continuous firing of flares and “Very” pistol lights. Listening posts, too, are most useful in this connection. These posts are situated at the end of covered communications led out from the fire trench any distance up to sixty or a hundred yards towards the enemy’s line—that is unless the distance between the lines is too short. Four or five men, one of whom is generally a bomber, usually constitute the garrison of a listening post. Their duty is to give notice of the approach of an enemy patrol or surprise infantry attack, and they remain out the whole of the night, being relieved after “stand to” just before dawn. They are protected by a wire entanglement from being rushed. Saps and mines are other features of trench life which are well known, but all have not heard of a “Glory Hole”.

When a portion of trench is captured the attacking party becomes more or less isolated, and has to bomb along the trench to left and right so as to increase its gain. The usual plan is to bomb and rush each traverse separately, while the work of the defending force is to prevent this, and if possible to drive the







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invader out. If unable to effect the eviction they "block" the trench, and again further along make another "block". The portion of trench in between these two "blocks" can be crossed by neither side, and it is known as the "Glory Hole". Where such places exist there is always plenty of excitement, for any attempt to break down the "block" and advance is the signal for a shower of bombs thrown by the opposing side.

Latrines are well constructed behind the firing line, with which they are connected by a narrow trench. They are invariably kept in good order and are frequently changed. To have the trenches as clean as possible empty bully beef and jam tins and broken food etc., are not allowed to be thrown indiscriminately about, but are buried. The dangers to health resulting from plagues of flies are also to a large extent avoided thus.

The front line trenches are not shell proof—no trenches can be. But the enemy cannot afford always to be obliterating them by artillery fire, and so they remain. But trench mortars are nearly always responsible for artillery activity. The German *minenwerfer* in 1915 fired two kinds of cylindrical shells,—large and small. Both kinds were difficult to see until they were in mid air, when they lopped over quite slowly and could generally be avoided. As soon as they were seen cries of warning were raised, and whistles blown. But the shell did not always prove harmless. As soon as a *minenwerfer* opens fire efforts are made to "spot" the place in the enemy's line where it is located. On this being discovered, telephonic communication is opened with the gunners and the suspected place is treated without delay to a storm of shells. Trench guns, therefore, never stay long in one place before passing on, and their visits are nearly always punctuated by a portion of damaged parapet, which may have to wait until night fall before it can be repaired.

Casualties from gun fire on an average day are not very heavy. The German is a methodical person, and the "Morning and Evening Hates" usually take place about the same times daily. All are thus ready for them, and as far as possible under



cover at the times. During the "Hates" a portion of the front line may be systematically bombarded, or the attention of the guns may be directed towards the support line or posts. Favourite objects of interest are communication trenches, and there is usually one special communication in a sector, along which it is dangerous to stroll between ten and eleven o'clock in the morning, and between four and five in the evening.

The whole system of trenches on the western front is very elaborate. Communication trenches are frequent, and to be among them is like being in a gigantic maze of zigzags. They are deep—the best are as much as seven or eight feet in depth—and narrow, and for this reason when reliefs are carried out great care is taken by the staff to ensure that two parties going in opposite directions do not meet. A crowded communication trench means casualties and confusion if suddenly bombarded. Deep trenches run right back until the danger zone from rifle and machine gun fire is past, and it is tolerably safe to take to the road.

Behind the firing line and close to it is a deep trench running parallel with it. This is known as the "Funk" or bombardment trench. It is usually about nine feet deep, and often so narrow as to be negotiable only by taking it sideways. When a heavy bombardment opens, it is impossible to hold the front line to a greater extent than that of leaving sentries, who will give warning when the enemy infantry are coming. The bulk of the defenders retire to the "Funk" trench, in which shrapnel is less likely to be dangerous, until the artillery preparation is over, when they emerge by the cuttings made at intervals for the purpose, and line the parapet, or what may be of it, to repel the attack. Sometimes, however, the trench may be rushed before the firing line can be formed, as happened last summer, when a Scottish battalion emerged from their trenches while the intense bombardment of the enemy's line was in progress and lay just outside the enemy wire. Watches had been synchronised, and when at the appointed time the gun fire ceased the Scotchmen were in among the



Germans with the bayonet before they had time to emerge from their "dug outs".

Or tricks may sometimes be played, as on one occasion at least was indulged in by some of our gallant Dominion forces, whose artillery made havoc of the German front line trenches, and then lifted their fire so as to form a "barrage" to prevent the supports from advancing. But the expected Infantry attack was never delivered, and, instead, the fire was suddenly redirected on to the front line, where the defenders had emerged and were massed to repel their enemy.

Some distance behind the firing line, but within easy access, the support trenches are situated. A unit usually has its own small sector of front to look after, and so is enabled to find its own supports and reserves. The actual firing line is thus not held continually by the same men during the battalion's turn in the trenches, and those companies in reserve and support are able to rest. The support trenches are made similar to the front line, so as to be capable of defence and to become the firing line if the original fire trenches be lost. Battalion headquarters are usually some distance behind them in the reserve trenches and posts. These, too, are made for defence, and the keeps are usually very strong positions indeed. Wire entanglements surround them thickly, and strong machine gun emplacements are constructed at all points of vantage within them.

At one time there were, and there may be still, those who declared that cover from view was as good as cover from fire. This war should have dissipated that idea entirely. Cover from view is not now possible, owing to the advent of aeroplanes and balloons, and hedges or canvas screens afford really no protection. Screens may be met with occasionally stretched across a road some distance behind the line. But that does not prevent the enemy's machine-gunners and snipers from firing up the road, and the passer-by is careful to get beyond the screen and into the trench on the other side as fast as he can. Of course this does not apply to the concealment from above of artillery, machine gun, or other positions. These can be so well hidden by artifice



as to be invisible to an observer, who, it must be remembered, is usually some thousands of feet above the ground. But modern field glasses and telescopes are so powerful that effective concealment from an enemy upon the ground is well nigh an impossibility.

Balloons, of the type known as the "Sausage," soar high behind each of the opposing lines at intervals along the front. Observers in them with powerful glasses are quick to notice movements behind the enemy line, in which direction they can see on a clear day quite a long distance. Movements by day of artillery or bodies of men may well become through them the target for heavy artillery and high explosives, even if aeroplanes, which pass and repass over the lines frequently throughout the day, do not happen to be at hand to give the information.

Medical arrangements in France are most efficiently carried out, and for this we have to thank to a large extent the excellence of the roads and railways, and the plentiful supply of motor ambulances. From the first aid stations near the firing line to the dressing stations some distance behind, and from the clearing stations even further back to the hospitals at the base, the highest state of organization and efficiency prevails; while the devotion to duty of doctors and nurses is everywhere spoken of with praise. The same remarks apply to the work of rationing the troops, and to the postal arrangements. In these matters, also, every advantage is taken of the excellent roads with which the north-east of France is provided. The Germans, it is believed, have light railways quite close up to their firing line. We, too, have our trolleys, which greatly simplify the problem of transport of rations for the battalion ration parties, who nightly convey food supplies, etc., from the points past which it is not deemed advisable for horse or mechanical transport to approach. The German trains can sometimes be heard at nights, when the air is still and when musketry is fitful. Just before the battle of Loos, too, the sound of guns and wagons moving southwards was very audible, though they must have been passing at a considerable distance away from the trenches.



When trenches are left for a "rest" in billets, the reliefs are carried out as quickly as possible, and the object of those going out is to push along fast so that communication trenches may not be packed with men for an undesirable length of time. There is no talking or shouting, and a start is made from the firing line as soon as the relieving unit has taken its place. An officer usually comes, before the reliefs are made, to take over trench stores,—such as wire, "duck boards", flares, bombs, "Very" pistol lights, gas, etc.,—and to learn his way about.

Billets are of two kinds, good and bad, and a place is remembered favourably or otherwise by them. Taken all round the farmers and others on whom we are billeted are very good natured and friendly, and excellent terms exist between them and the men, for whom, as for the officers, they do all they can. But there are occasions when the interpreter has to be called in to soothe the troubled minds of those who would rather have no visitors at all, in spite of the liberal payment made by government for them. While in billets there always seems to be much to do, uniform has to be cleaned; men have to be taken to the places arranged so as to give them all a hot bath; feet have to be inspected—trench life makes them soft; bombing practice and drill have to be seriously taken up; worn or torn boots and clothing have to be made good; pay has to be issued; there are a hundred and one things to be done. But that most in disfavour is the very necessary digging of trenches behind the line at night. This means a march out, several hours' digging, and then a march back to billets, and the sooner the work is done, the sooner will the "fatigue" be over. But the spirits of the men are proof against all discomforts.

The morale of the army is magnificent. The men are, generally speaking, in a high state of physical fitness, which those who have put in long spells in the trenches soon recover after they have been out of them for a few days. The equipment and training of the new armies is excellent, and when the time comes to advance, none will be in better fettle, or more eager to have done with the monotony of trench warfare, than the British soldier.



# ***THE ELECTRICAL PRINCIPLES INVOLVED IN THE FIELD TELEPHONE.***

BY

MAJOR H. L. CROSTHWAIT, R.E.

Everyone who has read accounts of the operations of the present war must have been struck with the importance of the Field Telephone as a means of communication. For trench warfare and for artillery observing stations it has practically replaced all other forms of communication which were formerly used. Though not invulnerable, on account of the liability of the wires to be cut by shell fire and by the movements of troops and transport, it still holds the field as a means of conveying orders to and from exposed positions, and will continue to do so until some better method is devised. The telephone, like many other scientific instruments, is a delicate machine and in order to get the best out of it the operator, in whose hands it is placed, should thoroughly understand how it works in every detail, and also the principles on which it depends. With this knowledge he will be able to diagnose quickly the cause of small interruptions and will be able to set things right and restore communication in a much shorter time than anyone ignorant of these principles. He will soon get to know by a kind of intuition where faults lie and their remedy. The object of this paper is to describe in simple, non-technical, language the electrical principles on which the telephone depends, with a view to helping those who have to use the instrument to detect faults as soon as they occur, and if necessary to make small repairs. These principles are, of course, well known to those who have made a study of electricity, but all have not had either time or opportunity to do this.

The Field Telephone differs from the ordinary instrument in that it is more portable and not only it is adapted for the transmission of speech, but also for communication by Morse Code. The latter has the great advantage that in the din of



battle when speech cannot be heard at all, or only indistinctly, Morse signals can easily be read. Then again when, from any cause, the resistance of the line wire has become great, impeding clear speech, Morse signals can still be got through as the apparatus connected with their transmission is not nearly so much affected by outside influences as the speaking portion of the instrument.

With a view to making clear the electrical principles which underlie the working of the field telephone each component part will be considered separately. These consist of :—

- (i) The battery, which provides the working current.
- (ii) The Induction Coil which intensifies the current, enabling it to traverse the line wire.
- (iii) The Vibrator or Buzzer whose function it is to transmit Morse Signals.
- (iv) The transmitter or microphone, which converts sound waves into electric current waves.
- (v) The Receiver, which reconverts the current waves into sound waves.
- (vi) The Condenser which enables the telephone to be used on existing telegraph wires, and makes it possible to tap other telephone messages.

In conclusion a combination of the above displaying a typical Field Telephone circuit will be considered, and simple tests described.

It should be understood that the figures illustrating the working of the component parts are diagrammatic only, constructed merely for the purpose of explaining their action and are not intended to represent the actual form of the apparatus which varies considerably in different makes of instrument.

For our purpose it is only necessary to mention the few electrical units which we shall meet with.

The unit of current is called an *Ampere*. The unit of resistance is an *Ohm* and the unit of electric pressure, or electromotive force, is a *Volt*. Measuring instruments used for testing purposes are



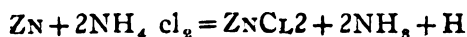
graduated in the first and last of these units ; it is, therefore, important to know what they imply. The relationship between the three units is given by the simple equation Current (C) = Pressure (V) divided by Resistance (R), and its variations, so that if any two of these quantities be known the third follows. For instance if with a voltmeter and an ammeter we measure the pressure and strength of a current flowing in a wire, or circuit, we can at once obtain the resistance of the system from the equation  $R = V/C$ .

The source of electricity used in the field telephone consists of a two-cell dry battery. The perfecting of these batteries has contributed largely to the success of field instruments, as, containing no free liquid, they are eminently portable and are now quite reliable, provided certain necessary precautions are taken.

Source of Electricity.  
Fig. 1.

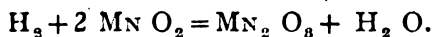
The typical cell consists of a zinc (Zn) envelope *a* in Figure 1 protected on the outside by a cardboard casing *b*, the zinc portion forming the negative pole of the battery and acting as a container for the other ingredients; *c* is a lining formed of a mixture of flour and plaster of Paris saturated with a solution of salammuniac ( $\text{NH}_4 \text{cl}$ ), which acts as the exciting material, so that it adheres to the inside of the zinc. In the centre of the container is placed a carbon rod *d* which forms the positive pole of the cell. Surrounding this rod in the space *e* is packed a paste consisting of a mixture of manganese dioxide, ( $\text{Mn O}_2$ ), plumbago and gum which is called the depolariser. A disc of paper or canvas *f* is placed on top and over it is a layer of sawdust *g* which allows of expansion and absorbs moisture. The whole is sealed, top and bottom, by a layer of pitch *h*, through which passes, at the upper end a small glass tube *j* to allow of the escape of any gas formed in the interior. When the positive and negative poles of the cell are joined by an electric conductor, such as a copper wire, the following action takes place. The salammuniac ( $\text{NH}_4 \text{cl}$ ) acts on the zinc (Zn) forming zinc chloride ( $\text{Zn cl}_2$ ), ammonia ( $\text{NH}_3$ ) and hydrogen (H) as expressed by the equation:—





Now the tendency of the free hydrogen, which has been generated at the zinc, is to pass towards the carbon pole, where it would collect and soon prevent any further flow of electricity, were it not for the depolarising material in the space *e*.

The oxygen of the manganese dioxide ( $\text{Mn O}_2$ ), one of its ingredients, combines with the hydrogen forming water ( $\text{H}_2 \text{ O}$ ) and so prevents it reaching the carbon pole, as expressed in the equation:—



The water appears in the form of moisture and when it becomes excessive is absorbed by the saw-dust or remains in the body of the cell. From their nature these cells are especially suited to intermittent work *i. e.* they require periods of short rests. If they are allowed to remain on closed circuit for too long so much hydrogen will be generated that the depolariser will not be able to absorb it as quickly as it is formed and some will reach the carbon pole tending to stop the current flow. For that reason they are well suited to telephone work which is of an intermittent nature, and if the cell is to last a long time a prolonged electrical connection between the positive and negative plates should be carefully avoided by the operator, and this is the chief precaution he has to take. The cell is hermetically sealed and if it fails, it cannot be repaired—but must be discarded and replaced by a fresh one; for that reason it is well to provide extra cells. At the same time if carefully treated, as described above, they are wonderfully efficient and will last a long time. The voltmeter should read 1·5 volts when the cell is fresh and when this drops to about 1·2 the cell should be replaced by a new one. The figures are of course doubled in the case of the two cells employed in the telephone. There are many forms of cells on the market which are probably only slight variations of the above.

Surrounding every wire in which an electric current is flowing there exists a region in which magnetic force is displayed. That is, if the

The Induction Coil.  
Figures 2 & 3.



needle of an ordinary compass be brought into the neighbourhood of the wire it will tend to place itself at right angles to the flowing current.

This region of force round a wire is represented conventionally in figure 2;  $a b$  is a conductor in which a current is flowing from a dry battery B and the circles round it represent the lines of magnetic force.

As soon as the current ceases to flow the magnetic field also ceases to exist and, as it were, collapses, only to be thrown out again when the current is restarted. If then we devise a means whereby we can cause interruptions to the flow of the current, as by the key  $f$ , we shall have near the region of the wire an alternately radiating and collapsing field with lines of force moving away from, or towards, the wire at the instant of each start or cessation of the current; in other words we shall have a moving magnetic field surrounding the stationary wire carrying the intermittent current.

Now if we place another wire  $c d$  parallel to the first one, so that it lies within the magnetic field, every time the field moves, in consequence of an interruption or variation in the strength of the current in  $a b$  the lines of force will move backwards and forwards through the wire  $c d$  and we shall have a corresponding current induced in it which will be made evident if a suitable instrument be placed in the circuit as at  $e$ .

As indicated above it is not necessary that the current should be completely interrupted, it is only necessary to vary its strength, in order to obtain a movement of the field of force and the production of a corresponding current in  $c d$ .

It is important to note that as the lines of force radiate outwards from the wire  $a b$  they cut  $c d$  in one way, producing a current in one direction; when the field collapses the lines converge on  $a b$  and cut  $c d$  in the opposite way producing a current in the reverse direction to the first. While, therefore, we have a direct intermittent current in  $a b$  there is, induced in  $c d$  an intermittent *alternating* current. This has a special



importance in the working of a military telephone which will be explained later on under the head of the Condenser.

The arrangement here described is the simplest form of an induced current. The wire *a b* in which the current flows from the battery is called the *primary* and the other wire *c d* in which it induces a current, is called the *secondary*.

In practice the primary is represented by a few turns of a thick wire, having a low resistance to the passage of a current, and the secondary by a large number of turns of fine wire as indicated diagrammatically in figure 3. These wires are shown, for clearness in the figure, as lying side by side but in actual practice they are wound one over the other on a soft iron core. Each wire is covered with an insulating material, such as silk thread, which prevents metallic contact between them.

The object of this piece of apparatus, which plays a very important part in the working of the telephone, is to convert or transform, the current of comparatively large quantity and low pressure, given out by the battery, into one of small quantity and high pressure capable of overcoming the resistance of the line wires. This is accomplished by making the number of turns of wire of the secondary far more numerous than those of the primary. Suppose, for instance, that the battery gives a pressure of 3 volts and that the secondary winding has 100 times as many turns as the primary, then the voltage available for the line wire will be 300, less a certain amount of loss depending on the efficiency of the induction coil, the current in the secondary being correspondingly reduced. What is required to overcome the external resistance is high pressure or voltage; a very small current suffices for the purpose of transmitting either speech or Morse signals. The induction coils used for field telephones are from 3 to 4 inches long and about one inch in diameter, the primary and secondary wires being wound on a bundle of soft iron wires which forms the core.

An electro-magnet consists of a soft iron core, round which an insulated copper wire is wound. This is represented in figure 4; *a* is the soft iron core

**Electro Magnet. The Buzzer Fig. 4.**



with the wire winding. When a current traverses this wire the iron core, which was not previously magnetic, exhibits all the properties of a magnet, one end becoming a north and the other a south pole. It loses this as soon as the current ceases. This property, peculiar to *soft* iron, is made use of in that part of the field telephone called the vibrator, or buzzer, which serves the double purpose of acting as a call-up and also as a means of transmitting messages by the Morse Code. Its action is very similar to that of an ordinary electric bell except that the armature is made to vibrate much faster. The current from the battery B, Fig. 4, passes round the two cores *a* converting them into a magnet which immediately attracts the armature *e* which is held by the spring *d* against the contact *c*. This has the effect of breaking the circuit at *c*, when the core momentarily ceases to attract the armature *e* which flies back under the action of the spring, again making contact at *c* and thus repeating the cycle of operations in rapid succession. So long as the current is flowing, the armature vibrates rapidly in front of the electromagnet giving out a buzzing sound hence the name of this apparatus. Thus we have produced a very rapid intermittent current which is what we require for the primary of the induction coil *p* placed in the same circuit. The key *f* is used for completely interrupting the current for short or long periods for the purpose of producing the dot and dash sounds of Morse signals, which, after transformation into a current of high voltage in the secondary *s*, are transmitted by the line wire to the distant station. Figure 4 is a diagrammatic representation of an arrangement which would transmit Morse signals only, but not speech.

Sound is propagated through the air by a series of vibrations, or waves, which follow each other in quick succession varying in intensity according to the variations in the source from which they originate. In the case of the human voice these vibrations are very complicated. It is the function of the transmitter, or microphone, now about to be described, to convert these air vibrations into

**The Transmitter, or  
Microphone. Figure 5.**



electric current vibrations, or current waves, in such a way that they alter in intensity with every shade of variation in the air vibrations which reach the instrument. Considering the complicated task it has to perform the apparatus is comparatively simple. A large variety of microphones have been devised as transmitters, but it is only possible to describe here one of the best known forms usually employed in field telephones. The object aimed at in all these devices is to provide a resistance that will vary under the influence of air vibrations which impinge on it. A reference to figure 5 will explain the arrangement; *a* is a hollowed out carbon receptacle forming a kind of cup in which is placed a number of polished carbon spherical granules *c* resembling very fine shot. These completely, but loosely, fill the cup the mouth of which is closed by the thin carbon disc, or diaphragm, *b* held in position by the metal capsule *d*. The carbon cup, and its contents, are in contact with the metal bolt *f*, the capsule *d* being insulated from it by the ebonite washer *e*. The current can then flow, as shown in figure, from one pole of the battery B through *d* and *b* thence through the carbon granules to the metal bolt *f* and back to the other pole of the battery after traversing the primary *p* of the induction coil.

Now when the sound waves, due to speaking near to disc *b*, impinge on it they cause the small granules which are loosely packed in *c* to vibrate and shake about. This has the effect of altering their resistance to the passage of the current flowing through the system and of the varying it in exact proportion to the vibrations received on the carbon disc *b*. Hence, as already mentioned, we have a series of complicated current waves, following every modulation of the voice, sent through the primary *p* which induce similar currents, but of much greater intensity, in the secondary *s*. These are transmitted along the line to the distant station where the receiver reconverts them into sound waves which are heard by the listener's ear at the other end.

We have already seen that the transmitter sends a series of electric current waves through the line wire corresponding to the sound waves it receives.

The Receiver.  
Figure 6.



es from the speaker. It is the function of the receiver to re-convert these electric waves into sound waves, so that they may be heard as spoken words by the listener at the distant station. The following is a description of the apparatus used for this purpose. In figure 6 *m* is a permanent steel magnet into the ends of which have been secured the soft iron pieces *N* & *S*, forming respectively the north and south pole of the magnet. Round each of these is placed a bobbin wound with many turns of fine copper wire the ends of which are attached to the two binding screws *b b*. A combination of this kind, namely of a permanent and an electro-magnet, is called a polarised electro-magnet, that is, it has permanent magnetic poles the strength of which can be increased or diminished by passing a current, in one or other direction, through the bobbin, thus its magnetism may be temporarily increased or diminished at will. It has an advantage over a simple electro-magnet in that a smaller current is required to produce the same effect. In front of *N* & *S* is placed a thin iron disc, or diaphragm close to the poles, but not actually touching them, held in position by the ebonite box *a* which encloses the whole arrangement. The alternating current from the transmitter at the distant station entering by the binding screws *b b* passes through the bobbins, and as it does so, varies the strength of the magnetic poles in exact proportion to the current variation; consequently the pull which they exert on the iron diaphragm is constantly changing and causing it to bend and vibrate backwards and forwards in a similar way to the diaphragm of the transmitter. These movements of the diaphragm set up vibrations of the air in its neighbourhood which can be heard when placed close to the listener's ear. These are a feeble imitation of the original vibrations which impinged on the diaphragm of the transmitter.

In the same way, when sending Morse signals, the rapid alternating currents due to the action of the buzzer, as already described, produce vibrations of the diaphragm and set up a musical note which, when suitably interrupted by the sending key, can be divided up into dots and dashes as desired. The



receiver can therefore be used for either listening to spoken words or to the Morse Code signals. As the sound emitted from the receiver when the Morse sending key is depressed is considerable it is also used as a call-up at the distant station.

The Condenser is a very simple piece of apparatus consisting of a number of thin sheets of tin foil *a* and *b* which are separated from each other by some insulating material *c*, such as parafined paper, so that they are not in metallic contact. All the odd number plates are joined together as at *a* and the even numbers as shown at *b*. Though a condenser is not essential to the working of a telephone when it is inserted in the circuit (*see* figure 8) an existing telegraph wire, in which messages are being sent, can be used as a line wire, for either speaking or Morse Signals, without interfering with the message it already carries. The reason for this is that only alternating currents can pass through a condenser, such as are used in the line wires of the telephone circuit, while the currents used for ordinary telegraphic purposes are direct current which cannot pass through the condenser; nor do the telephone alternating currents interfere in any way with the direct currents in the telegraph wire, though they are both being carried along the same wire at the same time. This fact is often made use of in the field. Further the condenser makes it possible to tap a message being sent in another telephone circuit. For this reason a condenser is an important adjunct to a military telephone. As a rule arrangements are made so that the condenser can be cut out or not as desired.

In some instruments a condenser is also employed connected between the vibrating armature of the buzzer and the contact points as shown in the left hand side of figure 8. Here the object is to prevent sparking at the moment of break of the current when the armature is attracted towards the magnet.

Now we propose to combine together in one figure the component parts of the telephone showing how they work as a whole.

Typical Field Telephone circuit Fig. 8.



Figure 8 is a diagram indicating this combination. The heavy lines represent the local circuit and the thin ones the circuit of the line wire which goes to the distant station. B is the 2-cell dry battery which supplies the current to either the microphone transmitter M, or the Buzzer V, according as the instrument is being used for conversation or Morse signalling.

When used for speaking the key M K is permanently depressed, completing the circuit from the battery through M and the primary of the induction coil  $p$  back to the battery. The key V K remains open so that no current passes through the Buzzer V. As already explained in detail, the local current is transformed in the secondary  $s$  of the induction coil, and after going through the near receiver R, traverses the line L, returning by way of the earth connection E or E C. In field telephones it is usual, for sake of economy of weight, to only have one line wire the earth being used as the return. Either a direct connection with earth can be made, or through the condenser by connecting through E C. This completes the speaking circuit.

When the Buzzer is in use the microphone M is cut out by raising the key M K and the Morse signals are transmitted on the key V K, the rest of the circuit being the same as before. In some makes of instrument the near receiver R is automatically short circuited when Morse signals are being sent, as in the case where the receiver is strapped to the operators ear it is inconvenient and disturbing for him to hear his own signals being transmitted.

An exactly similar arrangement is followed in the instrument at the distant station.

When it is desired, either to tap the conversation being carried on in another telephone circuit or to use an existing telegraph wire as a line wire, the connection should be made to earth through the condenser at E C.

It is necessary that the telephone operator should be capable of applying simple tests to his instrument in order to ascertain faults and rectify them.

**Simple testing Fig. 8.**



If a small voltmeter be available the voltage of the battery can be read off at once. Suitable pocket voltmeters are made for this purpose reading tenths of a volt up to 3 volts.

As already stated, each cell should read 1·5 volts when fresh and should this drop to about 1·2 the cell should be replaced by a new one.

If, however, a voltmeter is not to hand the following tests may be applied.

(i) Depress the Morse sending key V K (Figure 8).

(a) A loud buzz should be heard in the vibrator V. If weak it denotes the battery has run down and the cells must be renewed.

(b) If no sound is heard the battery may be so run down as to be incapable of working the buzzer, or

(c) A connection may be loose and the circuit should be carefully examined.

(ii) Having ascertained that the battery is in working order, connect the two terminal binding screws E & L, where the earth and line wires leave the instrument, with a short piece of wire. Press down the sending key V K,

(a) A loud sound should be emitted from the receiver R. In instruments which automatically short-circuit the receiver, when the buzzer key is depressed, provision must be made for keeping it in circuit while the test is in progress.

(b) If no sound is heard the receiver cords may be broken or connections loose, or

(c) The receiver may be short-circuited. These points should be examined and attended to at once.

(d) Absence of sound might be due to the diaphragm touching the poles of the magnet, or a break in the windings of the bobbins. These defects, however are not as likely to develop as (b) and (c) above.

(iii) Without removing the connection between E and L press down the speaking or microphone key M K.



***Electrical Principles.***

- (a) A loud click should be heard in the receiver R, both on depressing and releasing the key;
- (b) If no sound be heard the connecting cord may be broken, or
- (c) The microphone may be short-circuited internally or some part may be broken.
- (d) Sometimes the carbon granules stick together and should be shaken apart by tapping the microphone.

If the instrument successfully passes the above tests it should be in good working condition. If subsequently messages cannot be got through the fault lies either in the line or in the telephone at the other end.

No attempt has been made to describe the different makes of field telephones of which there are several on the market and in the service. But they all depend on the same broad principles which have been dealt with here and it is hoped that a knowledge of these will make it easy for anyone to follow the working and construction of any instrument he is likely to meet with.

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Fig. 2.

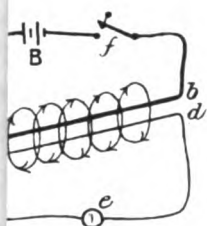


Fig. 3.

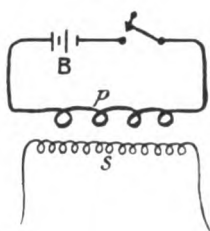


Fig. 6.

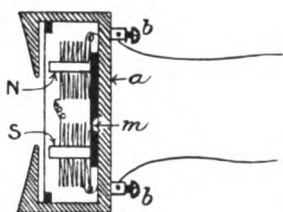


Fig. 5

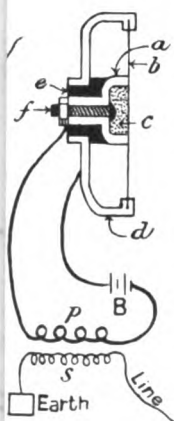


Fig. 7.

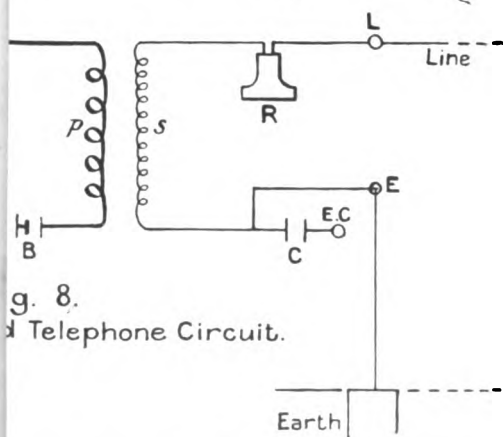
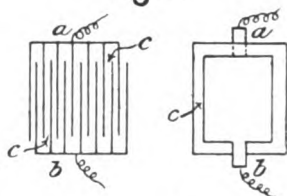


Fig. 8.  
Telephone Circuit.



**Electrical Principles.**

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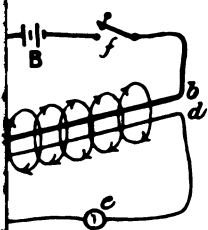


Fig. 3.

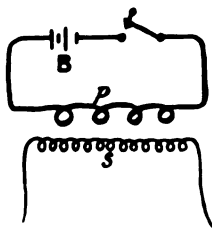


Fig. 6.

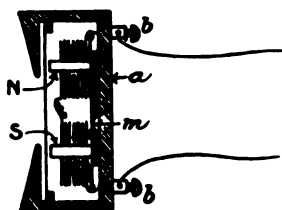


Fig. 5

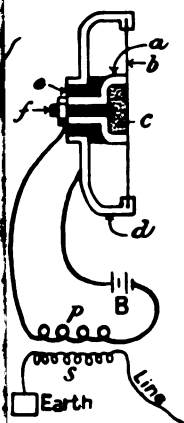


Fig. 7.

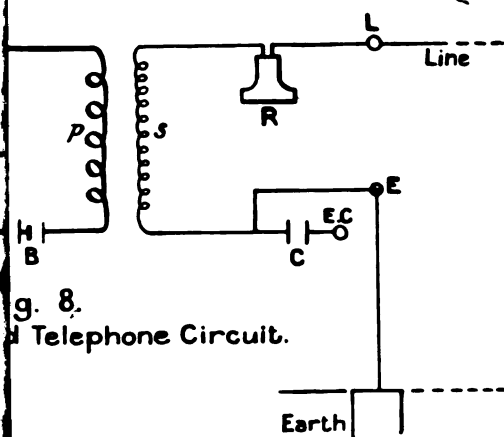
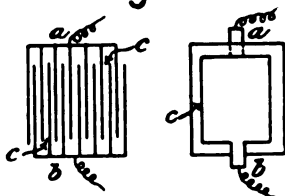


Fig. 8.  
Telephone Circuit.

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## **LECTURE ON "THE CAMPAIGN IN EAST AFRICA."**

DELIVERED BY

MAJOR F. S. KEEN, D.S.O., 45TH RATTRAY'S SIKHS,

*At Simla on the 6th October 1916.*

GEN: GAMBLE, LADIES AND GENTLEMEN.

I will begin my lecture with a brief geographical description of the theatre of operations. German East Africa is a huge tract of country, roughly 600 miles square, or considerably more than twice the size of France. It is bounded on the North by British East Africa and the Victoria Nyanza, on the South by Portuguese East Africa, Nyassaland and Rhodesia, on the East by the Indian Ocean, and on the West by Lake Tanganyika, 400 miles long from north to south, and the Belgian Congo.

The first feature which stands out as affecting the operations of large bodies of troops is the dearth of communications. Two railways exist, both of them metre gauge single lines. The Central Railway runs from Dar-es-Salaam to Ujiji on Lake Tanganyika, and the Usambara Railway from Tanga to Moshi on the southern slopes of Kilimanjaro. The roads are few in numbers and very bad. Ordinarily speaking the only form of transport in use is porters. Two roads joining the Usambara with the Central Railway claim attention, as they affect the operations. The first from Mombo to Mrogoro was originally constructed as a cart road but was not apparently maintained as such. During the war the Germans laid a trolley line, commandeered off their plantations, along a portion of this road, thus greatly facilitating transport between the railways. The second road runs from Moshi *via* Arusha and Kondao Irangi to the neighbourhood of Kilimatiindi. This was also constructed as a cart road, and is in direct continuation of a motor road which runs from Voi on the Uganda Railway, *via* Taveta to Moshi.



***The Campaign in East Africa.***

The next most noticeable feature from a military point of view is the bush which, in varying degrees of density, extends throughout the whole theatre of operations, and exercises a considerable influence on the movements and tactics of large forces. In many places the bush for miles at a stretch is so dense that it is virtually impenetrable for anything except elephant and rhinoceros—men can only make their way through it by cutting. Another feature is the extensive waterless deserts. On the Voi-Taveta road above referred to is a waterless stretch of 50 miles from Bura to the Lumi river, and this is by no means a solitary or a very unusual instance.

Before the war the seat of government was Dar-es-Salaam, a really magnificent town and harbour, which may be called the apple of the German colonist's eye. Soon after the outbreak of war the seat of government was transferred to Tabora, and later to Mrogoro, both of which are important towns on the Central Railway. Other important places are, on the coast, Tanga and Bagamoyo, the old Arab Capital; inland, Moshi, Muansa and Bukoba, the 2 latter being ports on the Victoria Lake. From the colonist's point of view the most desirable districts are firstly the Usambara Highlands and the lower slopes of Kilimanjaro and Meru, well watered, fertile and covered with coffee and other plantations, and secondly Ruanda in the North West corner of the Colony, a fine cattle district. For the rest it can hardly be described as a white man's country.

The Anglo-German border is a purely imaginary line, following no natural feature. It runs from Vanga in a general north-westerly direction, skirting the Usambara and Pare Mountains, to a point south east of Kilimanjaro. Here it bends slightly westwards, making Taveta, which lies in the gap between Kilimanjaro and the Pare Mountains, British. The boundary then curves eastwards making Kilimanjaro wholly German. Thence it continues north-westerly to the eastern shore of the Victoria Lake. Turning due west it roughly bisects the huge inland sea, and continues to the Belgian border.



Turning now to British East Africa, the main artery is the Uganda Railway, also a single metre gauge line, which runs from Mombasa through Nairobi, the principal town and seat of Government, to Kisumu on the Victoria Lake, with a branch to Magadi south of Nairobi. Mombasa stands on an island, to the south of which lies the magnificent land-locked harbour of Kilindini. The railway crosses to the mainland over the Makupa or Salisbury bridge, 600 yards in length.

Here again the most noteworthy features are the dearth of communications, the bush and the waterless tracts. Between the coast and the shore of the Victoria Lake there is only one line of invasion from British into German East Africa, or *vice versa*, by which water for any considerable force is obtainable throughout, viz the Tsavo river, which rises in Kilimanjaro and flows east across the Uganda Railway to its junction with the Athi.

Naturally the climate varies considerably in such a vast area. In the low lying coastal tract the moist damp heat renders marching extremely trying. Most of our operations took place inland at an altitude varying from 2000 to 4000 feet, and here too the fierce sun, want of water and thick bush make campaigning arduous work, July and August being the coolest months. The rainfall is somewhat uncertain. The greater rains may be expected to begin any time after the middle of March and may last for 2 or 3 months, the lesser rains occur in November and December. Malaria is very prevalent, also dysentery and veld sores. A local pest known as the jigger or burrowing flea causes much trouble. The female burrows into the foot and lays her eggs; if the egg sack is not promptly extracted, a festering sore results. The Tsetse fly and horse sickness cause great mortality among horses, mules and cattle.

With the natives we need only concern ourselves in so far as they affect recruiting. Much discussion arose at the outset as to the attitude of the natives towards the Germans, who have not a good name as colonists, but it is safe to say that no modification of strategical plans on account of the



## ***The Campaign in East Africa.***

effect on native opinion on either side would be justifiable. As regards recruiting the Germans are very well off, as in their territory are the Wanyamwezi and other kindred tribes from whom they can recruit as many soldiers and porters of excellent quality as they can possibly require locally.

In British East Africa the recruiting market is more limited, but sufficient for our requirements before and during the war. It could probably be developed considerably.

The German protectorate forces are organized in companies commanded by regular officers. The establishment of a company was originally 162 native soldiers (Askaris). This is believed to have been increased during the war to 200 and the number of whites raised to 10 per cent. Each company has 2 or 3 machine guns. At the outbreak of war there were in German East Africa 14 companies, some 2000 armed police and 8000 levies. The main concentration was reported to be in the Moshi area. An accession of fire arms salvaged from a store ship in April 1915 enabled the Germans to arm the recruits they had been busily training, many new companies were raised, and our intelligence estimate in the middle of that year credited them with:—

2,000 Germans.

14,000 Askaris.

60 Guns (including those of the *Königsberg*.)

80 Machine Guns.

This formidable force could never be concentrated for obvious reasons, and it is doubtful whether they could ever bring more than 6000 men to bear at any one point. Their regular Askaris were armed with modern Mauser rifles, the levies with the 1871 Mauser, a black powder rifle firing a lead bullet, about equivalent in value to the Martini Henry. These Askaris under the training and leadership of their German masters proved themselves fine fighting men. Their rifle shooting, fortunately for us, was poor, but their machine guns, mostly manned by white men, were deadly in effect and extremely well handled.



In British East Africa at the commencement of the war we had about the equivalent of 2 Battalions of King's African Rifles, a few police and some 600 European Volunteers, with three Hotchkiss guns and 11 ancient machine guns.

In the King's African Rifles commanded by Lieutenant Colonel Graham were some fine fighting material, well trained and well officered. The East African Mounted Rifles were a useful body of Mounted Infantry raised from among the settlers.

It was obvious that if the Germans knew our weakness they could make matters very unpleasant for us. Accordingly reinforcements were hastily despatched from India. About the 1st September 1914 Colonel (afterwards Major-General) J. M. Stewart, C.B., A.D.C. arrived to assume command in British East Africa bringing with him the 29th Punjabis. The remainder of Indian Expeditionary Force "C" arrived about a month later consisting of:—

Jhind Imperial Service Infantry.

Kapurthala                   ,,

Bharatpur                   ,,

Rampur                   ,,

27th Mountain Battery, Royal Artillery, 6 10—pr. guns.

Calcutta Volunteer Battery                   6 12—pr.   ,,

Volunteer Machine Gun Company, 6 Maxims.

As soon as war broke out the Germans occupied Taveta, a move which we were obviously powerless to prevent. Early in September a force estimated at 600 men advanced down the Tsavo river threatening the important railway bridge. A wing of the 29th Punjabis arrived just in time to co-operate with some of the King's African Rifles, and the enemy was driven back beyond Mzima, where an advanced post was established. An advance against Kisii in the Kisumu district was repulsed by the King's African Rifles. Early in October a force estimated at 600 or 800 men threatened Gazi, 30 miles south of Mombasa. The second batch of reinforcements from India arrived in the nick of time. The Jhind Imperial Service Infantry, sent



## ***The Campaign In East Africa.***

straight from Mombasa to Gazi by sea, landed in time to participate in the fight and the German force was repulsed.

The Germans having thus shown clearly their intention of assuming the offensive in East Africa, it was decided to despatch from India a force known as Indian Expeditionary Force " B " under the command of General Aitken to invade German East Africa. This force consisted of 2 weak infantry brigades, with six mountain guns and some Divisional troops. The plan of campaign was to land at Tanga and work up the Usambara Railway to Moshi. Obviously there were other plans possible. The capture of Dar-es-Salaam would probably have a great effect locally, but on the principle that the strategic objective of an invading army should be the destruction of the enemy's main forces, the proposed plan would appear to be the soundest that could have been adopted, the enemy's main concentration being round Moshi. Moreover, in invading *via* the Tanga—Moshi line, co-operation with General Stewart's forces in British East Africa would be simplified.

The force sailed from Bombay and Karachi on the 16th October and reached Mombasa on the 1st November. It was then found that surprise was out of the question. The coming of the force, and the point of landing, were matter of common knowledge and common talk throughout the Protectorate. Moreover the naval authorities insisted on giving Tanga 24 hours' notice before landing. Boiler trouble unfortunately prevented the battleship *Goliath* from leaving Mombasa, and the only fighting ship which accompanied the expedition was the old 3rd class cruiser *Fox*.

Time will only permit of a very brief reference to the operations at Tanga. On the night of the 2-3 November a covering force consisting of 1½ battalions under General Tighe effected a landing 2 miles east of the town. Early on the 3rd he advanced, but was repulsed by a superior German force in a strong position on a railway cutting which skirts Tanga on the east. General Aitken and the rest of the force came ashore and 2 days' strenuous fighting ensued, in which our troops were severely handi-



capped by the almost entire absence of artillery support. Our casualties amounted to over 800, including a high percentage of British Officers. Finally it was decided to abandon the attempt and to re-embark on the 5th.

The force returned from Tanga to Mombasa on the 7th November. The idea of again undertaking offensive operations on a large scale was abandoned until such time as considerable reinforcements should be sent to East Africa. Meanwhile, the force was organized for the defence of the Colony.

In December 1914 General Tighe cleared the enemy from the coastal belt south of Gazi to the Anglo-German border on the Umba river, but we eventually evacuated this area owing to the unhealthiness of the Umba valley.

During the ensuing months our attention was turned to the defence of British soil, and also to preparatory measures for the invasion of German East Africa when the arrival of reinforcements should make this feasible. It was decided to abandon the attempt to enter the country from the coast and to concentrate on the Kilimanjaro area. In February sanction was obtained for the construction of a railway from Voi *via* Maktau to Taveta with a view to an eventual offensive campaign, and this was commenced in March.

This was a trying time for the troops in British East Africa. The land frontier to be guarded was 600 miles in length, and though there are few lines of approach for a large force small patrols could reach the Uganda Railway at almost any point. This caused a wide dispersion of troops, which was accentuated by the necessity for safe-guarding the railway to Maktau and other important strategic points. No threat could be altogether ignored, and many a time troops had to be hurriedly despatched to meet some reported hostile advance, which as often as not failed to materialise. It became increasingly difficult to obtain reliable intelligence as natives on both sides found that short shrift was given to spies.

Throughout this period followed a succession of raid and counter-raid, long patrols through the waterless bush under a



scorching sun and at times drenching rain. As soon as the Germans became aware of the construction of the strategic railway from Voi, they commenced patrolling in the most aggressive way throughout the district from the coast to the Chyulu hills, directing their efforts against both the Uganda and the Voi-Maktau railways and also against any of our isolated detachments that offered a reasonable chance of local success. One cannot help admiring their boldness. Time and again they raided the railway, some of the parties doing a journey of 80 miles each way across the waterless Tarn Desert with their lives in their hands the whole time, for the pleasure of attempting to blow up an engine. These attempts really met with very scant success, but on the other hand it was extremely difficult for our troops to intercept or overtake the raiding parties. The hunt for a needle in a haystack becomes still more difficult when the needle is imbued with the power of movement!

Apart from the active and enterprising foe, wild beasts frequently gave our patrols a lively time. Mounted parties had great difficulty in preventing their animals from being stampeded at night by prowling lions, and many a patrol was charged by rhinoceros. On one occasion a rhino charged alternately a British and a German patrol who were skirmishing north of the Tsavo river, and finally assaulted some Masai who were watching the contest and awaiting the result, killing one of them. Both patrols and the Masai retired, leaving the rhino in possession of the field. On yet another occasion a badly scared porter arrived in an intelligence post stating that he was the sole survivor of a ration convoy which had been overwhelmed by a large number of German askaris. He knew they were German askaris because "the officer in command spoke Swahili with a German accent". Some hours later it transpired that the convoy had been charged and scattered by a rhino.

Some of the outposts were extremely unhealthy, and all the troops British, Indian and African, suffered severely. In some cases companies dwindled to 20 and 30 strong and battalions to 200 and 300. The troops never lost heart in spite of the sickness



and of the attitude of more or less passive defence which was forced upon us. There were many conspicuous instances both of units and individuals who, by their example and by boldly seizing the initiative locally, always looking out for a chance of ambushing a German patrol or raiding party, sometimes with welcome success, kept up the spirits of their comrades in these depressing circumstances.

In June a successful expedition was undertaken against Bukoba, a German port on the western shore of Lake Victoria. A force under General Stewart landed on the 22nd 3 miles north of the town. The enemy, whose numbers were estimated at 350 with a gun and 2 machine guns, put up a stout resistance, but, after carrying the main position covering Bukoba on the 22nd, our troops drove the enemy out of the town on the 23rd capturing the gun. After destroying the fort and wireless station the force re-embarked.

In November our spirits were raised by the good news that considerable reinforcements might be expected at an early date from South Africa, and that we might hope to be able to advance into the Kilimanjaro area before the rainy season began, towards the end of March. Our efforts to safe-guard the Uganda and Maktau railways were redoubled in order that no hitch might occur in the concentration. Unfortunately the news agencies throughout the Empire were permitted to blazon abroad the tidings of the coming reinforcements. Renter's telegrams were regularly transmitted by wireless from Zanzibar to His Majesty's ships, and thus authentic information regarding the relief that was to be sent us reached German East Africa.

The enemy consequently redoubled his efforts to damage the railway and so interfere with our concentration. During December and January he made several incursions into the Voi and coastal districts, and fairly kept us on the stretch, but we managed to frustrate his efforts.

The physical difficulties due to lack of water and roads in the proposed area of operations were so great that it was essential for General Tighe to be acquainted with the general



### ***The Campaign in East Africa.***

scheme well in advance, in order that he might pave the way by the construction as far as possible of railway and roads, and by the provision of water and the establishment of the necessary depots. The plan, originally proposed by General Tighe and eventually sanctioned with certain modifications by General Smuts was as follows:—

(a) The 2nd Division under General Tighe, consisting of the 1st East African and 2nd and 3rd South African Infantry Brigades, 4th South African Horse, 2 Companies of Mounted Infantry and numerous field, mountain, and heavy guns and howitzers, was to concentrate on the railway between Voi and Mbuyuni and advance thence on Taveta and Moshi.

(b) The 1st Division under General Stewart, consisting of the South African Mounted Brigade and the 2nd East African Infantry Brigade, with some additional mounted infantry, 2 field and one mountain battery, was to concentrate at Longido and advance thence between Kilimanjaro and Meru with the object of striking the Tanga-Moshi railway about Kahe, thus cutting off the retreat of the enemy from Moshi.

On the 20th January General Malleson advanced from Maktau with 3 battalions of the 1st East African Brigade and the 5th South African Infantry, the first of the South African battalions to arrive in the country, and occupied Mbuyuni and Serengeti camp, respectively 13 and 17 miles west of Maktau, in face of slight opposition, such fighting as there was falling mainly to the Mounted Infantry and armoured cars.

The railway was now pushed forward and arrangements made for water supply for the main concentration at Mbuyuni. There is absolutely no water between the Bura hills and the Lumi river, a distance of 50 miles. A  $2\frac{1}{2}$ " pipe was laid from Bura, but this only yielded 40,000 gallons a day whereas the force which eventually concentrated at and about Mbuyuni required over 100,000 gallons. The railway could carry an additional 20,000 gallons in tanks, and the balance had to be made good by means of storage tanks. It was obviously impossible to concentrate the whole force in one place for more than a couple



of days, and the difficulty had to be got over by keeping some of the troops back at Mashoti and Maktau till the last moment, each of these places having a separate pipe supply from the Bura hills. It probably seemed to the troops the most natural thing in the world that an army of some 30,000 men, including followers, and 10,000 animals, to say nothing of hundreds of motor cars and lorries, should be concentrated in the Serengeti plains and all have as much water practically as they wanted. Little did they think that by nature the place is a waterless desert, and that every drop they drank was brought from a distance of 30 miles by the forethought and exertions of our Engineers. At a critical moment a German raiding party succeeded in bombing the head water works at Bura, but the pipe was running full again within 24 hours and no one was ever short of water.

The transport difficulties too were enormous. Motor cars and lorries, ox wagons, mule wagons, and pack mules, all arrived at the eleventh hour and had to be sorted out and distributed. Hundreds of mules arrived without harness and many vehicles did not reach the country until after the advance had commenced, all of which entailed an immense amount of improvisation and changes of organization at the last moment.

Early in February the reinforcements began to arrive, and as soon as the leading Brigade was partially equipped, an attack was carried out on Salaita, a strong natural position on a hillock surrounded with bush, some 8 miles east of Taveta. The attack failed, but the South Africans learnt some valuable lessons in the difficulties of bush fighting, and also with regard to the fighting qualities of the German askaris.

About this time General Smuts arrived and after a hasty but thorough reconnaissance decided to adopt General Tighe's plan of a converging advance from Mbuyuni and Longido against the German force which was concentrated in the Moshi-Taveta area. This force was estimated at 6000 men with 16 guns and 37 machine guns. The German had constructed a strong position at Taveta, behind the Lumi river, with a chain of



***The Campaign in East Africa.***

outposts running from Lake Chala through Salaita to Lake Jipe. General Smuts made one important modification which was to divert General Van Deventer's mounted brigade from Longido to Mbuyuni.

On the 5th March General Stewart commenced his move from Longido across 35 miles of waterless bush. He encountered slight opposition only, but his march was much impeded by bad roads and trying physical conditions, and he was forced to call a halt on the 8th to rest his men and animals and to allow his supply column to catch him up.

On the night of the 7th—8th March Brigadier-General Van Deventer, with the 1st South African Mounted Brigade, 3rd South African Infantry Brigade, 2 field and 1 mountain batteries and technical troops, marched from Mbuyuni and Serengeti to a point on the Lumi river north-east of Lake Chala, where he arrived soon after daylight on the 8th. On the 8th, General Tighe with the remainder of the 2nd Division and the bulk of the guns commenced a bombardment of Salaita, while the infantry dug themselves in in preparation for an attack to be carried out on the 9th. The force reserve consisting of the 2nd South African Infantry Brigade and some guns, accompanied by General Smuts, followed in rear of General Van Deventer.

General Van Deventer rapidly made good the important Chala position by a converging movement from the east and north-west. The small garrison withdrew on Taveta, closely pursued by some of our mounted troops, who actually occupied a portion of the Taveta position on the afternoon of the 8th. As the enemy was seen approaching Taveta in large numbers, General Van Deventer wisely decided to withdraw this detachment to Chala for the night, naturally satisfied with the important success achieved.

A body of several hundred askaris made one or two determined attacks on the position held by the 2nd and 3rd South African Infantry Brigades on the Lumi river east of Chala. These were repulsed with loss to the enemy, but the South Africans suffered some casualties and the transport approaching



the river was also harried by scattered parties of the enemy.

On the 9th General Van Deventer forced the enemy to evacuate Taveta by getting astride the Moshi road in rear of that place. General Tighe continued the bombardment of Salaita, and his infantry advancing at 2 p. m. found that the artillery fire, combined with the turning movement, had forced the garrison to evacuate this strong position.

On the 10th Generals Van Deventer and Tighe converged on Taveta. The mounted troops had a brisk skirmish with an enemy force sent to re-occupy that place, which was eventually driven back along the Kahe road to the Nek joining Latema and Reata. Another body of the enemy withdrew *via* the Moshi road, destroying the bridges. General Tighe found the Lumi crossing impassable for motors, with the result that the bulk of his artillery and transport had to remain on the left bank until the afternoon of the 11th, by which time the bridge had been strengthened and the drift improved.

On the 11th General Smuts ordered up the force reserve from Chala to Taveta and despatched the mounted troops to pursue the enemy on a wide front. General Van Deventer with the bulk of his column was directed on Mamba Mission. The mounted brigade had some smart skirmishes in clearing the hills between Chala and the Himo. The 4th South African Horse with the 12th South African Infantry in support moved along the Taveta-Moshi road driving back what appeared to be the rear guard of the enemy force which had withdrawn in this direction. On the extreme left the mounted troops of the 2nd Division in reconnoitring the Taveta-Kahe road were held up by a force of unknown strength on the Latema—Reata Nek. It was obviously necessary to clear the Nek before the main force could advance by either road, as a counter-attack on Taveta from the south-west might have seriously hampered our movements.

The only troops available in Taveta were 3 weak battalions of the 1st Brigade, 4 howitzers and 8 light guns, and with these General Smuts determined to clear up the situation on the Nek. The operation was at first entrusted to General Malleson, but



later in the day General Tighe assumed command as General Malleson was seriously ill.

The 130th Baluchis on the right and 3rd King's African Rifles on the left formed the firing line, the objective being the spur of Latema which overlooks the Nek from the North. The 2nd Rhodesian Regiment was held in general reserve on the Kahe road. The lower slopes of Latema were found to be covered with dense bush and the firing line soon came under a galling fire from machine guns and snipers. The bush rendered effective artillery co-operation extremely difficult, and, though both battalions made gallant efforts, they found themselves unable to make good the commanding position on the crest of the ridge. At 4 p.m. the 5th South African Infantry, the leading battalion of the 2nd Brigade, arrived in Taveta and was at once sent forward to reinforce the attacking troops. Some fresh batteries arriving were also brought into action. At the same time General Tighe assumed command.

On the arrival of the 5th South African Infantry, General Tighe ordered the 2nd Rhodesian Regiment to advance and carry the King's African Rifles forward with them in an assault on the ridge, the 130th co-operating on the right. All ground gained was to be at once made good. The Rhodesians went forward with great dash and the King's African Rifles responded with a will. The assault was carried well up the slopes and in places the actual crest line was gained. Numerous hand-to-hand encounters took place. The enemy replied with a fierce fire from 2 field guns and numerous maxims. Unfortunately the King's African Rifles suffered a grievous loss in the death of their gallant commander Colonel Graham, who was killed while charging at their head up the slopes. This occurred at dusk and about the same time the enemy's artillery fire stampeded the ammunition mules of the Rhodesians, who consequently found themselves running short of ammunition and unable to hold the ground they had won. This caused a withdrawal on the left, with which the entire line was forced to conform. A few stalwarts only of the Rhodesians and King's African Rifles were able to hang



on to the positions they had won well into the night, some indeed till daylight. The enemy was not slow to profit by the retirement and counter-attacked vigorously on both flanks.

At 8 p.m. General Tighe was further reinforced by the 7th South African Infantry of the 2nd Brigade. He thus had 2 fresh battalions at his disposal, and with these he determined to make a night assault on the position as being the quickest way of clearing the enemy from the Nek, which was so vital for the furtherance of General Smuts' plans. It did not appear that the enemy had a large number of men in position, the bulk of the casualties being due to machine guns and snipers. A half moon promised sufficient light up to midnight, and, though thorough reconnaissance was impossible, it did not appear that the bush along the line of the road was very thick, or that any other obstacles existed.

The 1st Brigade was formed up astride the road 1000 yards east of the Nek, ammunition replenished and water served out, and the 2 South African Battalions under command of Colonel Byron advanced at 9 p.m. As they worked forward they came into much thicker bush than had been anticipated, and the enemy greeted them with a hot machine gun and rifle fire. They advanced most gallantly, driving the enemy before them through the bush till the actual Nek was reached. Here in accordance with Colonel Byron's instructions Colonel Freeth of the 7th South African Infantry wheeled to the right and Major Thompson of the same battalion to the left to crown the heights of Latema and Reata respectively.

The thick bush made it impossible for the whole line to keep touch, and some parties, finding themselves isolated and not knowing what was happening on their right and left, fell back on the reserve. In the centre at one point a party of 24 men came under the concentrated fire of 3 machine guns at close range, and 22, including Major Mainprize R. E. Brigade Major, were killed. Colonel Byron eventually found himself at midnight with only 20 men within 30 yards of the enemy's main position. Every time a man fired it called forth a hail of bullets from rifles



## ***The Campaign in East Africa.***

and machine guns, and in the absence of reinforcements he could neither advance nor hold his ground. On the right Colonel Freeth made his way laboriously up the steep slopes of Latema, but the men with him dwindled to 18. He was joined by a few remnants of Rhodesians and King's African Rifles and held his ground all night. On the left Major Thomson managed to keep together 170 men and with these he made good the most advantageous position he could find and waited for the dawn. Both these officers were awarded the D.S.O. for their gallant conduct.

About 1 a.m. General Tighe received urgent calls for reinforcements, and the 130th, who of the 1st Brigade had suffered least in the day's fighting, were ordered forward. As they were starting Colonel Byron came in, reporting that he had found his position on the Nek quite untenable with so small a force. Finding it impossible to gain touch with the flank detachments in the dark, General Tighe decided to await daylight before renewing the attempt to carry the position. At 7 a.m. our patrols sent to gain touch with the flank detachments found the latter in possession of the ridge north and south of the Nek, and the enemy in full retreat. The dense forest bordering the Kahe road made effective pursuit impossible, but the 8th South African Infantry were sent to make good the Nek, also some guns to shell the retiring enemy.

The enemy abandoned a 6 cm. gun and 3 machine guns. Many corpses found in the position testified to the severe handling he had received. Our casualties were 270, which cannot be considered a high price to pay for the results gained. Prisoners informed us that no less than 12 enemy companies were present on and in rear of the Nek, from which it appears probable that they intended to do more than merely cover the withdrawal on Kahe.

On the 17th General Van Deventer pushed on for Moshi which he occupied on the 13th.

General Stewart's force meanwhile had been so delayed between Geraragua and Boma ya Ngombe by the great difficulty



of finding a passable road that, though still meeting with but slight opposition, he did not reach the latter place till the 13th, and thus was too late to cut off the enemy in their retreat from Taveta and Moshi by moving on Kahe as had been intended. General Smuts accordingly ordered him to join General Van Deventer at Moshi, which he did on the 14th.

General Smuts had now established himself on the line Taveta-Moshi, but before that position could be considered secure it was necessary to drive the enemy south of the Ruwu river. Accordingly on the 18th a general advance in a southerly direction was ordered.

On the 20th General Smuts divined that the vital point was the road bridge over the Ruwu, east of Kahe station. He therefore sent three South African Battalions to reinforce General Sheppard on the Mue-Kahe road. On the same afternoon General Van Deventer with the whole of the mounted troops marched from Moshi to cross the Pangani south-west of Kahe with the intention of cutting the enemy's line of retreat. That night a most determined attack on the camp of the 2nd East African Brigade at Store, 4 miles south of Masai Kraal, was repulsed with heavy loss to the enemy.

On the 21st General Sheppard advanced southwards down the road, having under his command the 2nd East African and 2nd South African brigades, each 3 battalions strong, 20 guns, some 2 squadrons of mounted men and a half battalion of King's African Rifles. He rapidly drove the enemy back on to his main position which was found to be on the south edge of a clearing in the dense bush, with a good field of fire in front and its east and west flanks guarded by the Soko Nassai and Defu rivers, both of which are formidable obstacles, being passable only with great difficulty by infantry. All day long did General Sheppard hammer away at this position. The South Africans on the right made strenuous endeavours to cross the plain, but were held up by machine gun fire from front and flanks. On the left some of the 129th crossed the Soko Nassai, but were checked by some enemy companies skilfully disposed on the left bank. The 27th



### ***The Campaign in East Africa.***

Mountain battery was boldly pushed into the firing line. It was hoped that the 3rd South African Brigade operating towards the Rasthaus might be able to exercise some influence on this fight, in which case decisive results were to be expected, but the bush proved to be too dense and General Beranger was unable to assist. General Van Deventer too, as will be seen, was most skilfully held at arm's length by the enemy. General Sheppard had to fight his battle alone, and was unable to carry the position. At dusk he dug in, prepared to renew the attack on the 22nd.

General Van Deventer meanwhile, after experiencing some difficulty in crossing the Pangani, had carried Bauman hill, Kahe Kopje and eventually Kahe station, the enemy blowing up the railway bridge over the Ruwu. About mid-day the Germans counter attacked vigorously and shelled General Van Deventer's force with a 4.1 inch gun. All his attempts to reach the Lembeni road south of the Ruwu were frustrated, and the enemy succeeded in keeping open his line of retreat. As soon as darkness fell he retired all along the line, and at dawn our patrols found his positions evacuated, and a 4.1 inch gun blown up and abandoned on the south bank of the Ruwu.

Our casualties in these operations were roughly 350. Those of the enemy it is not easy to estimate, but a pile of used dressings 8 feet by 3 feet by 2 feet found on the Ruwu told its tale. The enemy is believed to have employed 14 companies on the 21st and several field guns and pompoms besides one, or possibly two, 4.1 inch guns.

With the clearing of the country as far south as the Ruwu and the taking of Arusha, which was accomplished in face of slight opposition while the above operations were in progress, the occupation of the Kilimanjaro-Meru area was completed.

General Smuts now distributed his main force on the line Mbuyuni-Arusha and set to work to refit and reorganize. Operations on a big scale were for the time being virtually impossible owing to the heavy rain.

During April General Van Deventer advanced from Arusha



to Kondao Irangi in the face of considerable opposition. This advance was really a remarkable performance. The state of the roads made the movement of wheeled transport extremely difficult. It is not a part of the world where white men can, ordinarily speaking, live on the country, and yet Van Deventer's Brigade of mounted Boers subsisted on very little beyond what they carried on their saddles. Van Deventer occupied Kondao Irangi on the 17th April and then found his way to the Central Railway barred by 10 companies under the German Commander-in-Chief Lettow Von Forbach, who attacked Van Deventer furiously but unsuccessfully.

On the 22nd May General Smuts commenced his advance down the Usambara railway. He moved in 3 columns on a broad front astride the railway, and thus turned the successive strong positions which the Germans had constructed. By the middle of June Mombo, Korogwe and Wilhelmsthal were occupied and General Smuts wheeled southwards along the Mrogoro road. He continued to advance on as broad a front as the country permitted. The Germans had prepared several lines of defence at Haudeni, Lakigwa river and in the Nguru mountains. At each of these points one of our columns attacked frontally while others moved against the enemy's flank and rear, and thus, though the opposition offered was considerable, the Germans were forced to evacuate each successive position, losing guns and material in their withdrawal. By the middle of August General Smuts reached the central railway at Kilossa and shortly afterwards occupied Mrogoro. This advance enabled General Van Deventer to move south. He reached the railway about Kilimatiude on the 29th July and wheeled eastwards to join hands with Smuts.

Meanwhile the Belgians were co-operating heartily in the west. They advanced through Ruanda in July, while a British force took Mwanza, thus clearing the whole Victoria Lake area. Early in August they occupied Ujiji, a Rhodesian force co-operating south of Tanganyika. The Belgians then advanced eastwards and captured Tabora. Other British



## ***The Campaign in East Africa.***

forces assisted by the navy occupied in succession Tanga, Bagamoyo, and other coast towns, and Dar-es-Salaam surrendered on 4th September under threat of naval bombardment. General Northey with a force from Nyassaland advanced to Iringa from the south, while the Portuguese moved across the Ruvuma.

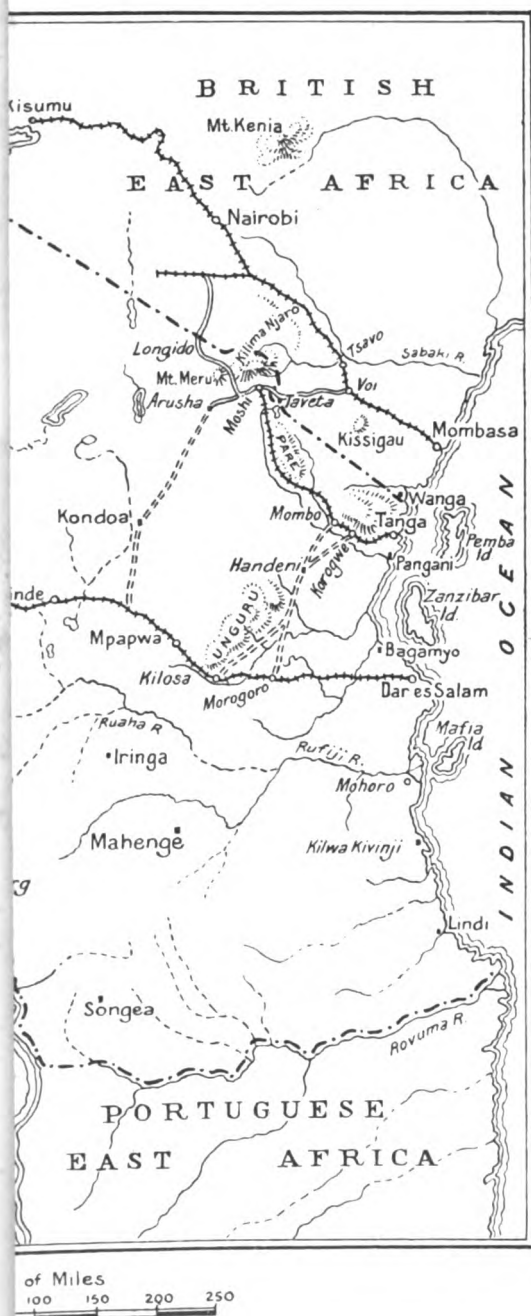
The main German force has now withdrawn south from the Central railway, and it cannot be doubted that they will continue to fulfill their role as a detachment to the utmost by holding out till the last, and so keeping General Smuts' considerable force away from the main theatre of war in Europe. It seems unlikely that they will attempt anything of the nature of a big stand, as that would hasten the end, and their energies will probably be confined to guerilla warfare. Their African troops can of course live on the country, but their supplies of ammunition must be beginning to run short, and, even if they contrive to evade complete envelopment by General Smuts' converging columns, it seems highly improbable that the campaign can now last more than a few months at the outside.

In conclusion it is pleasant to be able to record that the Germans throughout the operations in East Africa did on the whole play the game. I saw the German doctors and nurses in Tanga hospital treating our wounded, black and white, just the same as their own. There were unfortunately instances of our wounded being shot by askaris, but there were also numerous instances where German Officers saved our wounded from their own askaris.

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# EAST AFRICA.





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# **FRONTIER MOUNTAIN WARFARE.**

BY

MAJOR IVAN BATTYE, Q.V.O. CORPS OF GUIDES (F. F.)

To some it may appear waste of time to go into this subject during the course of the present great war  
**Introduction.** beside which any operations of the kind now to be referred to must seem but petty skirmishes.

But the author is so convinced of the value of frontier mountain warfare as a school of warfare in general that no apology is made for again referring to a subject that has been so frequently threshed out in the past.

More especially where infantry, the backbone of every fighting force, is concerned the detailed lessons to be found during a careful study of frontier warfare must be of immense value to the student of tactics in general.

Further, at a time when such large numbers of new infantry have to be trained during the comparative haste and excitement of the greatest war the world has ever seen, there is a danger of overlooking a subject to which only some six sections out of one hundred and sixty are devoted in our Field Service Regulations.

Thus the following pages are the result of some lectures prepared by the author for the instruction of Officers and Non-Commissioned Officers of Territorial Infantry who, very naturally, feel the need of something more detailed than the excellent principles laid down in Field Service Regulations Part I, Section 141 to 147. Although these lectures prepared within a limited time and amidst the pressure of other work were far from being all that the author would have desired yet it is felt that the result may be of use to others who have even less time available for studying this one branch of a soldier's preparation for war.

For the sake of convenience the author's subject is divided under the following heads:—

**Arrangement.**

I.—General Principles.

II.—Camp and Bivouacs.



III.—Marches.

IV.—Advanced Guards.

V.—Rear Guards.

VI.—The Attack.

VII.—Raids and Counter-raids.

In treating of these heads there must necessarily be some overlapping or repetition for which apology is due, but every effort has been made to reduce these to a minimum.

Thus the subject of piqueting is so closely connected with that of Advanced Guards, and the withdrawal of piquets with the action of Rear Guards, that no attempt has been made to separate them.

The author's acknowledgements are due to the authors of  
**References.** "Small Wars. Their Principles and Practice",  
 "Campaigns on the North-West Frontier",  
 "Lumsden of the Guides" and "North-West Frontier Warfare"  
 which are, for convenience, referred to as "Small Wars",  
 "Nevill", "Lumsden" and "Shadwell" respectively.

It is one of the objects of the author to acquaint his readers with these and other well known works from which a knowledge of frontier people and problems may be gleaned.

### **I. General Principles.**

Mountain Warfare as we are concerned with it here, must be looked upon as but a special branch of warfare against an uncivilized enemy. Thus the principles laid down in Field Service Regulations Part I, Chapter X., must be adhered to. It is mainly with the application of these principles to the special conditions of Frontier Mountain Warfare against the tribesmen on our North-West Frontier that we now have to deal.

We do not propose to enter at all into the strategy of Frontier Warfare as this is sufficiently dealt with  
**Strategy.** in various books to which we shall have occasion to refer.

Time and space being limited it will be sufficient for us to study the minor tactics of our subject as  
**Tactics.** being of greater value from the point of



view of the regimental officer, for whose benefit our labours are primarily intended.

Our Training Manuals have been so fully justified by the experiences of a number of campaigns under a variety of conditions that it would be a bold man who would dare to act, or even argue, against the principles laid down in them. But each one of us is required to consider how far such principles are applicable in particular cases and to act accordingly.

Practice and theory are so easily divorced when opportunities for practice are scarce and it is so impossible to make either take the place of the other that it must be our constant endeavour to keep the two marching hand in hand. We cannot hope, from a magazine article or a course of lectures, to become experts in Mountain Warfare, but if we can so employ our time as to acquire a sound basis of rules and principles on which we can train our men we shall at least have been justified in our efforts.

In all warfare against an uncivilized enemy, although discipline and organization will probably win in the long run, yet, without special training in initiative and in tactics suitable to the special conditions involved, such victory must be unduly costly and difficult of attainment.

Mountain Warfare is a somewhat wide expression and evidently covers such operations as the present war has witnessed in the Vosges, on the Italian frontiers, in the Carpathians and in Gallipoli as well as those against the various Pathan tribes of our North-West Frontier.

It is, however, with the last of these that we are primarily concerned.

For this reason we here intend to specialize, as far as our knowledge and experience may permit, on the conduct of tactical operations against these frontier tribes.

Thereafter it will lie with any of our readers who may be so placed to apply such knowledge as he may have acquired



from this special study to any mountain warfare in which he may be engaged.

As an encouragement to any who doubt the value of such frontier warfare as a training school for other fields, we may cite the fact that frontier troops of the Indian Army have almost invariably given a splendid account of themselves wherever employed during the present war. Individuals as well as regiments that have really distinguished themselves in warfare against Pathan tribes have generally shown up well in other forms of warfare.

Further—it is probably now no secret that, in the opinion of experienced officers who were on the spot during some of the most critical moments of our operations in Gallipoli, the presence of a few more battalions trained in frontier mountain warfare would have made all the difference between failure and success.

Other things being equal, the difficulties of warfare in hills or mountains are so much greater than of that in the plains that he who excels in the former is likely to be the better able to cope with the latter.

**Difficulties.**

In fact, the history of warfare from the earliest times tends to prove the fighting superiority of the hill man over his neighbour of the plains.

And this superiority, where it does exist, is not only due to superior physical powers as a result of more favourable climatic conditions but also to the fact that the nature of the ground on which he lives and of warfare thereon tend to greater developement of warlike qualities.

Even where war is almost unknown, after generations of peaceful developement the hill man appears to retain something of his warlike qualities for a longer period than does his fellow of the plains.

In contrast with the conditions usually obtaining in civilized warfare, in operations against the Pathan tribes of our North-West Frontier it is al-

**Objectives.**



most invariably difficult or impossible to find objectives, such as a town, shrine or sacred place, the destruction or capture of which will exercise any decisive effect.

This is especially the case with such tribes as those of Bajaur, the Mohmands and the Wazirs who border on or live partly in Afghan territory.

An advance of our troops against tribes so placed is the signal for the despatch of women and children, cattle and valuables to the Afghan side and the commencement of guerilla warfare in which the actual killing and wounding of an active and elusive enemy is the only way in which he can be influenced.

Our punitive operations against the Mamunds, a very important section of the Bajauris, in 1897, were thus seriously complicated by the fact that their lands extend over the Afghan side of the border line. When we advanced against them they retired fighting to this line, along the crest of a high range of hills, harrassed us whilst we burnt their villages on our own side of this line, and invariably proved most active during our retirements from such affairs.

The fighting qualities of such an enemy are never much in evidence during our advance or whilst we hold good covering positions. It is when we retire that they immediately prove their quality and the truth of the reference in Field Service Regulations Part I, Section 141-4, to "the susceptibility of this class of enemy to moral influences."

As opposed to these conditions we have the case of the Afridis, perhaps the best-armed and most powerful of our frontier neighbours.

This tribe, with its summer resort in Tirah where the Afridis build good houses and own much valuable property, is more vulnerable and therefore the less likely to embark in hostilities against us since the operations of 1897-98 when we amply proved our power to penetrate to their most inaccessible fastnesses.



The importance of studying the habits, methods of warfare &c., of our enemy cannot be too **Study of Tribes.** strongly insisted upon. These naturally vary to a considerable extent with different tribes. The nature of their country, the number of rifles &c., at their disposal, and so on.

In "Frontier and Overseas Expeditions from India" the habits, characteristics &c., of the various tribes are dealt with in a most practical and useful manner.

For instance, the Afridis are so well armed and so many of their able-bodied men have served for a time in the ranks of our Indian Regular Army or Militia that an expedition against them would be a very different matter to one against the Bunerwals who are in possession of very few rifles and who do not enlist in any numbers. Again, the Afridi is, owing to his proximity to Peshawar and to British Territory in general, not nearly as susceptible to religious or fanatical influences as some of the more remote tribes and, therefore, not so ready to embark in hostilities against us or to risk his life in a charge to close quarters. But he is the more apt in the use of cover and of long-range rifle fire.

The trans-frontier Pathan, from the nature of his ordinary existence amidst rugged mountains, blood feuds and constant insecurity of life, is an **Enemy Tactics.** adept at ambushes, movements by night and all such forms of warfare—especially when fighting, as he usually is, in country in which he is familiar with every by-path.

For this reason it is very seldom possible to beat him at his own tactics as advocated in Field Service Regulations Part I, Section 141-2. But when this is possible as is sometimes the case with regiments that enlist suitable classes, Afridis, Mohmands, Gurkhas etc., the results are often astonishingly complete.

In nearly every frontier campaign there have been instances of most prolonged and obstinate night sniping, coming to a sudden end as a result of a well-planned ambush carried out by the right kind of men.



It is however well to remember that such affairs are better left alone by troops that have not had considerable experience of night work or of the wily Pathan and his ways.

In Field Service Regulations Part I, Section 142-12, we are told that the use of scouts for this kind of work must be very exceptional—Colonel Callwell in his "Small Wars, their Principles and Practice" gives us some sound advice as well as some useful examples on this subject. (1.)

The Gurkha Scouts were notably successful in such enterprises during the Tirah Campaign of 1897-98.

Field Service Regulations Part I, Section 141-9, refers to the necessary precautions regarding secrecy in dealing with uncivilized enemies.

This is a subject on which a warning is only too urgently needed.

Such precautions become yearly more important on our North-West Frontier as was amply proved during the operations of 1915 when enemy spies were more than once actually captured in our own camps.

There are several ways of punishing recalcitrant tribes.

**Ways of punishing tribes.** Amongst these are:—

- (a) Blockades and Baramtas.
- (b) Counter-raids.
- (c) Expeditions.

These will be referred to more fully in one of the author's later articles when discussing Raids and Counter-raids.

A blockade is mainly a political measure carried out with the aid of Police, Militia and sometimes regular troops, and consists in the stoppage of all intercourse with the tribes concerned.

This is particularly effectual where the tribes are dependent on trade with British territory for such articles as salt, tobacco, grain etc.

A Baramta or "rounding up" is, similarly, a political operation by which police and troops are employed, without

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(1) *Small Wars*, pages 471, 472.



previous warning, in rounding up all individuals, cattle and other property of an offending tribe that may be found in British territory. This also is found very effective under certain circumstances.

Counter-raids and Expeditions are mainly military measures which either need no explanation or will be dealt with later on.

Having dealt shortly with the general principles of Mountain Warfare we will now turn more particularly to the application of these principles to the special kind of mountain warfare with which we are here concerned.

These principles are laid down so clearly in Field Service Regulations Part I, Section 142 etc., that the intelligent reader cannot but wonder that so much can be contained in so little.

At the same time those that have had much experience of frontier mountain warfare, whilst acknowledging the wonderful quality of these principles, must also recognize the great difficulty of applying them in practice.

For instance we are told that "the leading consideration in Mountain Warfare is to leave no higher ground within effective ranges from which fire can be brought to bear" at the same time we are warned against climbing higher and higher and the possible difficulty of extricating our command.

The above "leading consideration" is rightly emphasised more than the warning which follows it. But in practice this warning is also of primary importance. In practice it is seldom or never possible to attain the ideal so laid down without endangering the safety of the whole force concerned owing to the physical difficulties of climate, ground etc., so that a commander will generally have to be content with something far short of the ideal.

In fact—selection of a position is almost invariably reduced to a compromise in which the officer concerned is dependent on his own judgment in balancing the claims of security against the limitations of time, physical conditions, climate, etc. Every



frontier expedition, including the operations of 1915, has afforded examples of piquets being sent out so far and so high that consequent fatigue, thirst and general exhaustion owing to severe climatic conditions have jeopardized or delayed whole columns of troops.

Another principle we find emphasised is, to put it briefly, the  
**Covering fire.**                      invariable use of covering fire.

If this principle is thoroughly grasped and applied, combined with an intelligent use of ground, both in advancing and retiring, more than half the difficulties of Frontier Mountain Warfare will disappear.

Troops moving in hilly country must avoid ravines unless all  
**Ravines.**                      high ground commanding such ravines is  
securely held.

But it is well to remember that ravines may hide an enemy and must therefore be searched as well as commanded. It is not sufficient to use and hold spurs and salients if this is not done in such a way as to discount the dangers that may lurk between them.

The details of a retirement must be carefully thought out  
**Retirements.**                      beforehand, remembering that all commanding  
positions must be held; that covering  
fire is essential and that within such ranges as to make it most  
effective, say 400 to 600 yards; and that time must be allowed  
to complete the operation before dark with an ample margin  
for eventualities. All movement must be rapid and methodical  
whilst successive positions are held to cover each step in the  
retirement. This sort of work, in face of pressure from an active  
and aggressive enemy bristles with difficulties and requires constant  
practice in peace time.

If casualties occur during such a retirement it will often be  
**Casualties.**                      necessary to stop the movement and some-  
times to carry out a counter-attack.

As stretchers can seldom be used on bad or steep ground  
various methods of carrying wounded men must be practised in  
peace time. Those who have had much experience of frontier



warfare will have seen more than one occasion when, although stretchers could perhaps be used there have not been enough of them and wounded could only be got away by the employment of such other methods as were suitable to the occasion. It should be a point of honour in every regiment that a wounded man is never to be left to the tender mercies of the Pathan, whatever it may sometimes be necessary to do in the case of dead men. In the same way the security of the rifle is a point of honour scarcely less important than that of the wounded.

The question of pace in mountain warfare is one of considerable importance. In advancing up hill the pace should be slow enough to ensure that the men will always be in good condition to shoot straight or to cope with a sudden rush. That is—there should always be some wind in hand for emergencies. At the same time rapidity in movement up hill is sometimes invaluable and must be cultivated in training.

The Gurkha Scouts in Tirah in 1897-98 repeatedly proved the truth of this.

The rule for pace in retirement has already been referred to—when moving, move fast. (1).

In frontier mountain warfare bunching and straggling are equally to be deprecated, in advance or retirement.

The men should be sufficiently extended to be able to use their rifles, to make use of available cover and to avoid forming conspicuous targets and yet not so scattered as to be unable to support one another in the event of an unexpected rush.

In this connection the views of General Sir Harry Lumsden on "Attack" are of interest (2).

The use of scouts in frontier warfare is a subject of much difference of opinion. In some cases so-called "Scouts" are nothing but expert skirmishers and are generally used as such. The truth of the matter would seem to

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(1.) Nevill, P. 310.

Small Wars, P. 325 &c.

(2.) "Lumsden", P. 311.



be that really selected and highly-trained scouts will be invaluable, but unless they are extremely active and particularly well-trained in hill warfare they are better not used as scouts at all.

The views of such well-known authors as Colonel Callwell and Captain Nevill on this subject are worthy of consideration.

(1.)

A British soldier, fully equipped and wearing heavy hob-nailed boots, can hardly be expected to cope with a lightly-clad Pathan, probably bare-footed, as active as a goat and working on ground on which he has been born and bred. The same thing applies, in a lesser degree, to the Indian Sepoy even when he may be himself a hill man.

So far no reference has been made to the use of Cavalry **Cavalry and Artillery** or Artillery in Mountain Warfare.

As to cavalry, if well trained in dismounted action, their co-operation with infantry will sometimes be invaluable, both morally and materially. But their action will be mainly that of Mounted Infantry whose value was amply proved in Egypt, South Africa and Thibet. Sometimes too the threat alone of the "arme blanche" will work wonders against the frontier Pathan who is notoriously respectful to the dreaded lance where the ground affords any scope at all for its employment.

However, this respect alone is enough to make the opportunity rare so that Cavalry that are not equally expert in the use of the rifle are better not employed in frontier warfare. The history of frontier expeditions affords several examples of the use of Cavalry such as in the Swat Valley in 1895 and 1897, the Mohmand border in 1897 and in the Mamund Valley in September-October 1897. The last of these gave the 11th Bengal Lancers and Guides Cavalry more than one opportunity of showing how Cavalry may, by a judicious combination of mounted and dismounted action, co-operate with the infantry on whom the larger share of fighting must usually fall in the hills.

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(1.) *Small Wars*, P. P. 345, 350, 376 &c.

*Nevill*, P. P. 318, 319 &c.



Artillery, especially mountain artillery, is invaluable in frontier warfare if kept well in hand, not used prematurely in an advance and freely used to cover and assist the infantry in retirements.

The views of Colonel Callwell on this subject are of special interest to both artillery and infantry officer and will well repay the reader. (1)

Captain Nevill too, being himself an Artillery Officer, devotes special attention to the use of guns (2.)

There is frequently a noticeable lack of co-operation between artillery and infantry in Mountain Warfare.

The Artillery, in their anxiety to find targets, will open fire on objectives that have no immediate bearing on the action that is in progress and infantry, in their pre-occupation of the moment, will fail to give the artillery that information without which close co-operation in action is impossible.

Yet, inter-communication is, from the nature of the ground, easier, in mountain warfare than in other terrains and opportunities for close co-operation and over-head covering fire of guns the more frequent.

## **II.—Camps and Bivouacs.**

The position, form, and general arrangements, for camps in warfare against Pathan tribes are, necessarily, subjects for special consideration and differ essentially from the conditions of warfare against civilized enemies, mainly owing to the fact that the system of outposts applicable to the latter is out of the question in the former.

Further, owing to the prevalent scarcity of water in tribal territory, to the nature of the ground and to the great defensive power of organized troops against unorganized tribesmen, water supply is generally a more important consideration in the selection of a camp in frontier warfare than tactical security. And what is true of camps is equally applicable to bivouacs.

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(1.) *Small's Wars*, P. P. 307, 429 &c.

(2.) *Nevill*, P. P. 353, 354.



The subject of this articles naturally divides itself into two main heads:—

1. Camps and Bivouacs as referred to in Field Service Regulations Part I, Section 143, and
2. Protection when at rest as dealt with in Field Service Regulations Part I, Section 145.

Under "Camps and Bivouacs," again we have to consider two sub-heads:—  
**Camps and Bivouacs.**

- (a) Camping arrangements, and
- (b) Sanitation.

Major Shadwell tells us in his "North-West Frontier Warfare" that in siting a camp "water  
(a) **Camping Arrange-  
ments Siting.** is the first consideration, tactical considerations come second."

Sir Harry Lumsden (1) tells us that economy of space, easy access to water and good communications are the points to be looked to.

The views of these two authors are worthy of careful consideration, and may be summed up under the following heads:—

Water.  
Security.  
Convenience.  
Sanitation.

where communications would be included under convenience.

We are told in Field Service Regulations Part I, Section 143. 1, that the shape of a camp should  
**Shape of Camp.** be as nearly as possible rectangular.

In practice the natural irregularities of the ground in hilly country will seldom or never permit of this ideal, the shape of a camp must not be too irregular as there is otherwise a danger of troops firing into one another during the excitement of a night attack. But—whilst bearing these considerations in mind—it is important to adjust the outline of a camp to that of the ground in order, where possible, to command near approaches and dead ground.

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(1) "Lumsden" P. 313.



## **Frontier Mountain Warfare.**

Cavalry should not usually be camped on the perimeter.

**Distribution of troops** Artillery, when placed on the perimeter, should be given that portion of it which is most commanding and with a very limited front well protected on both flanks by infantry.

Machine guns should be at angles from which they can flank important portions of the perimeter and should be provided with posts, or other suitable contrivances, to limit the lateral range of their fire and so prevent their firing into their own camp.

Salients must be allotted to particular units so that there can be no doubt as to whose is the responsibility for their defence.

Transport and other animals should be so placed that they are protected by combatant troops.

Camps in Frontier Mountain Warfare must be "perimeter camps" that is protected on all sides by **Entrenching and Exits** entrenchments.

Exits from camp should be covered by a special length of trench and each such exit must be committed to the care of a particular unit, both for policing by day and for defence at night.

When possible, an officer is sent ahead of a battalion or other unit on the march to lay out the **Laying out Camp.** camp or bivouac under the orders of the Staff Officer concerned. He is assisted in this duty by the camp colour party of his unit, members of which then meet their respective companies etc. and lead them to their portion of the perimeter, care being taken to avoid moving inside the perimeter.

Brigade Commanders usually issue Standing Orders on the subject of Camp Routine but, in the **Standing Orders.** absence of such orders, commanders concerned should consider details as to:—

Unauthorized persons.

Passes.



Bounds.

Entrances and Exits.

In addition each unit will do well to arrange for guarding its own area from followers of other units.

Special attention should be paid to care of arms and ammunition. The usual rule is that by night every man, except sick, is responsible for his own rifle and ammunition. Some frontier regiments make use of light chains by which each man's rifle is attached to his own person at night. The professional rifle thief is full of courage and resource and is by no means easy to defeat.

There is a well-known story of an Afridi having died at Peshawar. His companions removed the body for burial in their own country. When about to cross the border with the coffin the suspicions of the police were somehow aroused. The coffin was examined and found to contain, not a corpse, but a number of stolen rifles.

Tents or shelters should be pitched parallel to the perimeter and from 5 to 10 yards from it in order to allow of the men tumbling out quickly in case of alarm, to give space for falling in and to secure freedom of movement.

The sanitation of camps in frontier warfare is of special importance from the fact that space is usually very limited. One unit after another may have to be encamped on the same spot throughout the course of an expedition and any carelessness in sanitary arrangements must have a cumulative effect.

Latrines and cooking places for day use should be outside the perimeter and, generally, inside a line of obstacles. As far as possible all cooking should be completed before dusk.

**Latrines, Cooking Places.**

Emergency latrines and cooking places for night use should be constructed inside the area occupied by each unit. But when the tactical situation permits, as it often will do, night latrines may be provided just outside the perimeter, under the eye



of a sentry, and protected by a low parapet.

Officers Commanding units are always held responsible for the sanitary care of their own areas, both inside and outside the perimeter.

**Commanding Officers.**

They should see that proper arrangements are made for:—

- (a.) Day and night latrines and urinals.
- (b.) Disposal of dry and wet refuse.
- (c.) Cleanliness of all cooking places, whether of units, messes or followers.
- (d.) Disposal of litter &c.

At dawn men should not be allowed to make use of day latrines until their vicinity has been adequately patrolled and reported clear.

**2. Protection when at rest.** This will also fall under two sub-heads:—

- (a.) Outer line, and
- (b.) Inner line.

This invariably consists of piquets so posted as to deny to the enemy as far as possible all ground from which he may overlook or fire into camp. The positions selected for such piquets naturally vary with the nature of the ground and the armament of the enemy.

(a) **Outer Line.**

Against tribes that are well-armed with a large proportion of modern rifles these piquets may have to be as much as 2000 yards from the camp if the position of the camp itself is commanded by surrounding hills.

Piquet positions are usually allotted to those units in front of whose portion of the perimeter they may be. And their adequate defence then remains a point of honour with the unit concerned.

Every piquet is independent and self-contained, must not look for support or reinforcement and must be prepared to hold its ground to the death.

**Piquets.**

It is not intended by this to deny the possibility of reinforcement or relief of a hard-pressed piquet.



The last Mohmand Expedition of 1908 afforded a striking example of what can be done in case of need when a piquet, being persistently attacked by the enemy, was first reinforced and finally actually relieved during the hours of darkness. (1)

But troops must be trained on the accepted principle that piquets in the outer line of defence of a camp must be self-dependent and prepared to die at their post.

A piquet Commander must make every possible effort to render his post impregnable, and that at the very earliest opportunity. The most usual form of protection is a stone sangar built up from material available on the spot and improved and strengthened with obstacles as time and available materials may permit. A Commander should never be satisfied with the strength of his piquet post. There is always something more that can be done and it is just this little bit more that may make all the difference when a swarm of yelling cut-throats is bent on wiping out the piquet.

Men may grumble at what appears to be superfluous labour but they will be equally ready to take a pride in their own work when it has been thoughtfully planned and thoroughly carried out and especially when it has, perhaps, resulted in the decisive repulse of an obstinate night attack.

In planning a sangar, or other form of piquet post, it is important to so arrange it as to bring fire to bear on any position in which an enemy might collect in numbers for a rush, and also to secure cover from fire from one's own camp as well as from positions from which the enemy might be able to fire into the piquet.

It is occasionally possible to carry barbed wire, but transport for this purpose is so rarely available that troops must be trained to make use of any natural resources that the locality may provide. Thorn zerebas, small abattis, scarped approaches &c., are some of the expedients that may be resorted to. But care must be taken not to so furnish a lurking enemy with cover from which he may

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(1) "Frontier and Overseas Expeditions from India" Vol. I, Supplement 'A', P.37.



**Frontier Mountain Warfare.**

snipe the sentries or other defenders of the piquet post.

**Alarm posts.** Every man in a piquet should know and sleep near his alarm post.

The Commander should sleep beside a sentry so that he can be quickly and easily roused in case of any unusual occurrence.

**Sentries.** Usually not less than one third of the total strength of a piquet should remain awake and on the look-out.

These "look-outs" or sentries should not move about unnecessarily and should be protected by large stones, recesses or other irregularities at the top of the sangar, which should be breast high.

**Strength.** The strength of piquets is a subject of much difference of opinion. The present tendency appears to be to increase it far beyond what was considered necessary 20 or 30 years ago. One reason for this may be the fact that the tribesmen have so many more modern rifles than in years gone by. Their methods of warfare have also shown signs of greater cohesion and concentration on a given objective. Where a dozen rifles would have been considered sufficient some years ago we now sometimes want a platoon or more.

The use of hand grenades and bombs will, no doubt, modify our views on this subject in the near future; and we must be prepared to find our enemy resorting to the use of similar modern "improvements".

**(b.) Inner Line.** The Inner Line is the defensive perimeter of the camp itself, consisting of some form of entrenchment or breast work forming the best possible obstacle to an attacking enemy as well as an adequate defence against the bullet of the sniper and resting place for the troops in camp when sniping is going on.

In case of alarm or attack this perimeter is manned by all men not told off for any other duty. Every man must know his alarm post; men must be detailed to stand to all ani-



imals when necessary; and there should be special covered places allotted to all followers.

A General Reserve must always be detailed, to fall in when necessary at some central point in the camp, usually the central cross-roads.

One of the best forms of trench to be constructed on first arrival in camp is 6 feet wide and one foot deep with the earth thrown up in front to form a parapet not less than 3 feet thick. Traverses at short intervals will give cover from enfilade fire and, as opportunity may occur, spare earth should be utilized to provide cover from reverse fire. In a trench of this form all ranks can rest in peace during the heaviest sniping and it is easily improved in any desirable way when more time is available.

**Trenches.**

It is well, when possible, to avoid putting stones in a parapet unless well covered with earth as stone splinters are sometimes nearly as dangerous as bullets.

Commanders of lesser units should always be careful that they know the exact limits of the portion of the perimeter for which they may be responsible and that there is no division of responsibility in the case of any salient, roadway, exit or entrance.

**Limits of responsibility.**

Search lights, arc lights, flares and bonfires are all of the utmost value when they can be arranged for. But care must be taken that light is thrown in the right direction and not on the defences of the camp. In the case of arc lights, flares etc., this can be provided for by means of screens of grass, matting or brushwood.

**Lights.**

It is usual to detail from a section to a platoon per company as In lying Piquets; these sleep fully accoutred and actually on the perimeter.

**In lying Piquets.**

At night sentries on the perimeter are usually posted in double groups with reliefs sleeping beside the sentries and in the trench. The intervals between such groups must depend on circumstances such as the nature of the ground, darkness of the night, character of

**Sentries.**



**Frontier Mountain Warfare.**

the enemy etc., but should seldom be more than 40 or 50 yards. In addition to these sentry groups on the perimeter, some single sentries should be posted in rear of the line of tents or bivouacs for protection against rifle thieves etc.

Where there are more than one unit in camp it is usual for each unit to have a small regimental reserve in addition to the General Reserve.

This regimental reserve is commanded by the Orderly Officer in case of an alarm or attack and falls in in some selected position which should be known to all ranks.

Firing at enemy snipers should not usually be permitted. Very good reasons for this are given in Field Service Regulations Part I, Section 145-7. Yet it is common to hear officers arguing in favour of returning the fire of snipers.

Those who have had much experience of frontier warfare are, however, generally agreed that such fire is an absolute waste of ammunition which would be much better reserved for more practical purposes besides being directly contrary to all our teachings on the subject of fire discipline and control. Even without such encouragement to the unsteady soldier who is always ready to pull the trigger in order to keep up his own spirits it is difficult enough to control the fire of troops in night fighting. Indeed, it is surprising to the inexperienced how readily untried troops can be betrayed into wild and uncontrolled firing from a perimeter camp at night. Several hours of peaceful sleep may be suddenly broken, when courage is at its "two o'clock in the morning" stage, by a few shots accompanied by two or three wild yells resulting in a ten minutes' fusillade from all faces of the camp. Only training, experience and the control of good officers and non-commissioned officers can prevent such things. It should be a point of honour in a good regiment to waste no ammunition in this way. The only really satisfactory way to deal with snipers is by means of carefully planned ambushes carried out by specially selected men. Otherwise they are better left alone to waste their own ammunition in ignorance of any effect their fire may have produced.



**III.—Marches.**

Like most other branches of military science the question of marching is one that demands special consideration when dealing with warfare in mountainous country, above all where we have to do with an uncivilized enemy.

To begin with, we must all agree that, other things being equal, a march in hilly country is necessarily more difficult than one on the flat. From this it will follow as a matter of course that any deficiency in march discipline will have more serious consequences on hilly roads, any undue opening out will be more difficult to correct and troubles due to badly loaded or weak transport animals will be magnified. Consequently the time factor will assume greater importance from the fact that it is more difficult to estimate the time required to cover a given distance.

Calculations for time and space, where trans-frontier roads and tracks are concerned, are also subject to special conditions wherein they must differ from similar calculations, where good roads are available the tracks across our borders are seldom wide enough to accommodate troops on a wider front than in file, or transport in more than single file. Frequently pack mules are the only form of transport that could face the difficulties that will be met.

Under such conditions a very simple calculation will show that even a small column of all arms, such as is usually employed in frontier warfare, will take up any thing from 5 to 10 miles of road space. Colonel Callwell and Major Shadwell have furnished us with some valuable remarks on this subject (1.) Schemes based on these ideas and on the time and space tables in our Field Service Pocket Book afford valuable training for officers on the lines laid down in Training and Manœuvre Regulations, Sections 9-23.

Inter-communication on the march is, perhaps, more easily secured in hilly country than on the flat.

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(1.) *Small Wars*, P. P. 290,291.  
Shadwell, P. P. 41,43.



In nearly every other detail marches in hilly or mountainous country bristle with difficulties that are not as prominent in flat or undulating country. It is a good plan to have a special observer detailed from each company, Machine Gun Section, baggage guard etc., on the march, marching on the right of the column to pass orders, information etc. During a halt these observers should remain alert on the road or on some commanding point close to the road. (*Vide* Infantry Training Section 116,15.) A light portable megaphone is invaluable in mountain warfare, either on the march or in action, provided it is used in moderation and not as an excuse for continual shouting which is a sure sign of bad training in all soldiering. In the absence of a megaphone the hands placed to the mouth are a very good substitute to increase the range of the voice.

In tribal territory, where roads exist at all, they are generally little better than footpaths, narrow and bad, so that normal march formations and distances cannot possibly be preserved. Under such conditions it is often advisable to work more on the lines of night marches as referred to in Field Service Regulations Part I, Section 132-8.

We thus find ourselves faced with the difficulties that are detailed in Field Service Regulations Part I, Section 141-5; long and vulnerable supply and baggage columns, small forces moving by different lines or on the same road at a day's interval, the impossibility of covering long distances during the hours of daylight, and so forth.

In addition, the trials of dust, heat and scarcity of water are often real and serious. Only those that have experienced it can appreciate what it means to march through dust so thick that the stomach revolts as against the nausea of sea-sickness, or through sun temperatures nearer 200 than 100 degrees Fahrenheit, when perhaps water is bad or unobtainable and the road long, steep and stoney. Yet, in spite of such conditions, we read of such marches as 80 miles in as many hours, 32 miles in 17 hours, 38 miles in 24 hours, and so on (1).

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(1.) Nevill, P. P. 127,226 and 349.



And these are but some examples of many such feats of endurance that stand to the credit of frontier and other troops of our Indian Army.

The average pace up and down hill must be slower and more irregular than on the flat. A fast pace uphill will cause tremendous stringing out in the rear of a column, and transport cannot move fast downhill. In marching uphill "more haste less speed" is a sound maxim. A slow steady pace without many halts is the best for climbing. For trained men climbing up a steep slope or footpath, one thousand feet in the first half hour is a fair estimate or, for longer climbs, one thousand feet per hour. Such estimates must be reduced in the case of troops that are not accustomed to hill work or are out of training.

The normal rate of march, 3 miles per hour for small forces or  $2\frac{1}{2}$  for large ones of all arms, cannot be expected in Mountain Warfare. We are told in Field Service Regulations Part I, (page 52 footnote) that on rough, uneven or hilly roads we are not to expect more than half the normal rates of marching. The roads we are concerned with in warfare on our North-West Frontier are generally rough, uneven and hilly, all at the same time, as well as narrow. Thus the 15 miles a day referred to in Field Service Regulations Part I, Section 26-4, as an average march for a large column of all arms, is quickly reduced, in frontier warfare, to 7 or 8 miles a day for a small column of all arms even when there may be no active opposition to further complicate matters. When however, in addition to an active enemy and very bad roads or only footpaths, we are faced with great heat and scarcity of water, we can begin to appreciate some of the considerations that our commanders and their staffs have to deal with when concerned with marches in frontier mountain warfare.

It is then "up to" the regimental officer to see to it that he is doing all he can, within his own province, to lighten these difficulties whenever the test may come. Good march discipline, physical fitness, well-

**Regimental Officers.**



laden transport animals, careful attention to all details of march orders and distribution of transport and baggage guards, are all points in which the regimental officer can do his share towards the smooth working of a complicated machine.

Careful and constant training in marching, on the lines laid down in Infantry Training, Section 116,15, cannot be too strongly insisted upon.

In marches in mountain warfare, as in night marches, **Officer setting the pace.** it is particularly important that the officer who is setting the pace at the head of a column should keep himself informed as to how those in rear are getting on. This can best be done by means of the observers referred to above or by signallers from commanding points close to the road.

**Order of march.** The order of march of columns in frontier mountain warfare, is mainly dependent on the nature of the country and the probable action of the enemy.

It is seldom possible, for instance, to employ cavalry at the head of a 'column,' the ground being usually unsuitable for cavalry action. But where cavalry are available, unless the route throughout is known to be of such a nature as to afford them no scope, they should not be too far back in case the country should open out sufficiently to afford opportunities for their employment. In the same way, although most of the work will generally have to be done by the infantry, yet when artillery are available there should always be some guns near the head of a column to afford that artillery support without which infantry would often have to suffer undue casualties.

When advancing into tribal territory and when, in consequence, the advanced guard may expect to meet with the maximum of opposition, the greater part of the available infantry should be near the head of the main body. Conversely, when retiring from the enemy's country and when, from his nature, he may be expected to exhibit his usual activity in following up the rearguard, the bulk of the infantry must be in the rear of the main body. Similar considerations will influence the positions



of guns, baggage etc; the latter being placed at that end of the column at which least activity on the part of the enemy may be expected.

The normal order of march of 2nd line transport in frontier operations is generally provided for in the standing orders of the division or brigade concerned.

**2nd Line Transport.**

The following is in accordance with generally accepted ideas for 2nd line transport of a brigade.

**(a) Mules.**

|                    |   |                                   |
|--------------------|---|-----------------------------------|
| Coats or Blankets. | } | In order of<br>march of<br>units. |
| Rations.           |   |                                   |
| Cooking Pots.      |   |                                   |

**(b) Carts, camels, or mules.**

Field Ambulance.

Brigade Headquarters 2nd line transport.

|                              |   |                                |
|------------------------------|---|--------------------------------|
| Regimental reserves S.A.A.   | } | In order of march<br>of units. |
| Baggage and stores<br>units. |   |                                |

Supply column.

In retirement the above order may be reversed, the baggage least wanted coming first. Or baggage may, on occasion, be divided into two or more portions, as recommended by Major Shadwell. (1).

It is usual to send camp colour parties and a portion of regimental sanitary detachments with the advanced guard under brigade orders.

**Camp Colour Parties.**

This is generally provided for in divisional or brigade standing orders.

Whenever companies are detached, as for instance in an advanced guard, ammunition, water and entrenching tools should accompany them.

**Detached Companies.**

This is a point that should be provided for in regimental orders as a matter of routine and must never be forgotten. Every frontier expedition has provided instances of ammunition and water being left behind by, or losing touch with, companies

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1) Shadwell p. 40.



that have subsequently found themselves in difficulties for want of those first essentials.

It is important in mountain warfare that the strength and composition of baggage guards should be adequate to deal with the difficulties that may be met, attacks by small bodies of tribesmen, broken down mules or camels, animals or loads falling down steep places, and so on.

For instance, the 1st line transport of an Indian Infantry company consists of :—

- 8 Ammunition mules.
- 2 Water mules.
- 2 Entrenching Tool mules.

Total 12 mules.

With these 12 mules we have 4 drivers, not sufficient to lead the mules singly over bad places. Thus a blisti, or pakhali, should accompany each water mule and the guard with these 12 mules should be not less than one non-commissioned officer and 5 men. If 4 or 5 of these men are ammunition carriers, so much the better. Mules must always be led singly over bad places. The strength of 2nd line baggage guards is usually laid down in brigade or divisional standing orders.

In addition to regimental escorts for S. A. A. reserves, there should be not less than one non-commissioned officer and from 4 to 8 men per company with 2nd line transport. These should be distributed along the baggage column in small formed bodies. They must assist in the adjustment of loads and in the preservation of good march discipline.

Regimental followers should be allotted a definite position and should be kept together in the line of march under the orders of a regimental policeman or non-commissioned officer specially detailed for this duty.

The preparation of loads for various types of transport



**Loads.** in frontier warfare requires special instruction in peace time. For instance, it is quite possible with a little practice, to tie up a box of ammunition, with pack-mule slings, in such a way that it can be opened at will and loaded and unloaded daily for a month or more without disturbing the knots. The loading of camels, the most common form of transport for the 2nd line in frontier operations, requires a special degree of patience and skill which can only be acquired by hard practice.

The control and shepherding of a long column of pack transport throughout a hot-weather day is a task to try the patience of Job.

**Control of Transport.**

But if the baggage guards provided by units are well-trained and keen on the good name of their own regiments, the time taken to cover a difficult day's march may well be halved to the advantage and comfort of weary troops. Regimental officers should study carefully the rules laid down in Field Service Regulations Part I, Section 33, and should make a point of training their men in all the duties of baggage guards.

A point that is of great importance in connection with marches is the proper care of the feet.

**Care of the feet.**

In marching in hilly country troubles from sore feet are, perhaps, not so prominent as on the flat. In marches on the flat, where metalled roads are more frequent, whatever friction there may be is continuously on the same part of the foot, whereas in the hills the ups and downs bring continual change. Thus, in climbing uphill friction comes on the heels which will get sore during a long uphill climb. In marching downhill the process is reversed and the toes get most of the friction. In hill work however, once the feet do give out the trouble is likely to be more serious. Well-fitting, very loose boots and well-fitting socks are of importance. A thin close-fitting sock worn inside the thicker one will reduce friction on tender feet. And, in addition, a further useful precaution is to soap the inner sock where



friction is most likely, say at heel and toe. In heat, the feet are softer than in cold and this is a further reason why sore feet are more difficult to avoid in the plains than in the hills.

Methylated spirits, whisky, and tincture of iodine are all good hardening agents when applied to the feet. An old soldier is said to have remarked that he had found whisky more useful inside his boots than in his stomach. However there is only one real specific for tender feet and that is hard progressive training in marching, to make and keep the feet hard just as plenty of digging is the only preventive of blistered hands and aching muscles after toiling in the trenches.

#### **IV.—Advanced Guards.**

The tactical handling of an advanced guard in frontier warfare is so closely connected with road-piqueting that it is impossible to treat of the two separately. Thus in studying our present subject we must base our ideas on the teachings of Field Service Regulations Part I, Sections 144 and 146. At the same time a battalion or company that has been so trained as to have acquired a thorough grasp of the tactical handling of piquets in frontier warfare should find little difficulty in any other forms of attack or defence against Pathan tribes.

Hence the writer looks upon the subject of this article as one of the most important of those with  
**Importance of subject.** which we have to deal during the present series. But, as an advanced guard in frontier operations is concerned only with the posting of road piquets and not with their withdrawal, the latter will remain to be dealt with in connection with rearguards which will form the subject of the next article.

The strength of an advanced guard in warfare against  
**Strength.** Pathan tribes is mainly dependent on whether necessary piqueting is to be carried out by the advanced guard itself or by special troops detailed for this purpose. The decision as to which of these two methods is to be adopted rests with the commander of the column and depends



on the nature of the country, the character and armament of the particular tribes involved and the strength of the troops available. Where it has been decided that piqueting is to be done by the advanced guard, which we are told should be the normal procedure, the piquets should be drawn from the main guard. The advanced guard commander is then responsible for posting piquets in suitable positions and for letting the rearguard commander know where they are. The advanced guard commander should, when possible, depute an officer to make a rough sketch (or sketches) shewing the positions of various piquets. Such sketches should be sent to the rearguard commander for information.

Before pursuing any further the details of our subject it is well to emphasise the principle that there must be no gambling on the supposed inferiority of our immediate enemy in frontier warfare. As far as may be reasonably possible all tactical dispositions should be made as if in the certainty that the tribes we are engaged with are the best-armed and most aggressive of their kind. At the same time, it would of course be folly to treat an ill-armed enemy with perhaps only one indifferent fire-arm to every 6 or 8 men in the same way as though every man had a good modern rifle and plenty of ammunition and knew how to use them. Tactical dispositions should be sound in the light of all available information and should, when possible, allow a good margin on the side of safety. Over-caution in dealing with an uncivilized and ill-organized enemy is even more to be deprecated than recklessness. "When in doubt, attack" is a good rule in frontier warfare.

As the object of an advanced guard is, first and foremost, to secure a column on the march from delay or surprise, guns should when possible be attached to it. They will be found of great value in helping to clear the enemy off commanding points and in covering the advance of piquets to their positions. In such a case very forward tactics are indicated and Mountain Artillery are of

**Artillery,**



special value.

It is an important principle that the vanguard of an advanced guard in frontier operations should never be drawn upon for piqueting purposes but should be kept intact as such throughout a march.

**Vanguard.**

A vanguard in frontier warfare is usually composed of infantry, although, as laid down in Field Service Regulations Part I, Sections 66-3, mounted troops may be employed for the purpose when, as is sometimes the case, the line of advance is sufficiently open to permit of their employment. Owing to the usually broken nature of the ground, and as the vanguard will usually have to fight as well as reconnoitre, it should be strong enough to carry out these duties for the actual front during the short time required to throw out the necessary piquets from the main guard.

When necessary, and as may often happen where the ground is difficult and large numbers of piquets are required so that the main guard has been nearly used up in piqueting, the advanced guard may be reinforced from the main body. In such a case, should an officer senior to the advanced guard commander be sent up with reinforcements he will not usually take over command of the advanced guard.

**Reinforcement.**

As regards the strength of the main guard of the advanced guard or of piqueting troops, a good rough rule is that in ordinary hilly country, about two platoons per mile of road will be required for actual piqueting. Thus it will often happen that a single company may be furnishing piquets over two miles or more of broken country and it will rest with officers concerned to do their best to keep touch with portions of their own commands.

**Strength of main guard.**

As far as possible portions of one company should be utilized on the same side of the road and company commanders must exercise their own discretion as to where they will post themselves so as best to supervise the withdrawal of their own piquets.

**Companies, Platoons and Sections.**



A company commander may have to content himself with accompanying or supervising one of his own platoons whilst the remainder are out of his hand for the whole day, but this is unusual, or where the nature of the ground or the action of the enemy render the use of supports necessary, he may take up some central position with one or more platoons in support of piquets provided by his company. As in the case of the advanced guard commander, a company commander should, when possible, furnish the rearguard commander with a rough sketch showing the positions of his piquets. In such warfare the powers of command and initiative of platoon and section commanders are of the utmost importance. These qualities must therefore be fostered and encouraged during training.

No definite rule can be laid down as to the strength of piquets. of road piquets.

Much will depend on the ground, the nature and armament of the tribes engaged, the length of time the piquet may have to be in position and a variety of other considerations. In Field Service Regulations it is laid down that "Piquets usually vary from a few rifles to a platoon, but on occasion may be even stronger. They should be as small as is compatible with the object for which they are posted." (1.) But we must remember the margin of safety referred to above.

Security in piqueting arrangements is more dependent on good dispositions for cross and covering fire. from other piquets and from supports than on the actual strength of piquets themselves. In other words, combination, like in a good football team, is more than half the secret of success in road piqueting as indeed in all hill warfare.

Before entering still more fully into the details of road-piqueting, there is one point in connection with the handling of a vanguard in frontier Formations of vanguard & piquets.

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(1.) Field Service Regulations Part I. Section, 146-1,



warfare which will be suitably referred to here, as it may be taken to apply equally to the disposition of a piquet when advancing to its selected position. It is a common practice with some of the more fanatical tribes for small parties of desperate men to lie up in nullahs, scrub jungle etc., in hopes of being able to kill British officers or other hated infidels. With an ordinary extended line-searching broken ground there are not enough men on any given spot to deal adequately with a rush of 8 or 10 such "Ghazis" as they are called. A system of extension in groups, say 4 men with a non-commissioned officer, has been found useful on such occasions. If it is a narrow nullah that is to be searched, there should be one such group on each bank and one in the nullah, the latter being kept slightly in rear of those on the banks. In searching scrub etc., officers should never move in front of their men and all ranks should have their weapons ready for immediate use; bayonets fixed, a round in the chamber, finger almost on the trigger as though shooting hares, the rifle carried at the port and every sense on the alert. Some very instructive practices in Individual Field Firing can be evolved on the above lines where suitable ground is available.

The object of piqueting when a column is marching through mountainous country is to deny to the enemy all ground within effective range of the road from which fire could be brought to bear on the troops using that road.

When the position and strength of a piquet have been decided by the advanced guard commander, the piquet commander is given a ticket or "chit," in duplicate, on which are written the name of the regiment, the number of the piquet, its strength and whether posted on the right or left of the road with reference to the direction of advance. For convenience these chits are usually printed in a triple counterfoil book under regimental arrangements. The unit (battalion or company) commander keeps the book with



the counterfoils in his own possession or sends it, when his piqueting duties are complete, to the rearguard commander thus affording a further check against the possible forgetting of any individual piquet in the subsequent withdrawal. The piquet commander keeps one portion of this duplicate chit himself.

In some regiments the portion of the chit to be kept by the piquet commander is distinguished by a diagonal red line.

The other portion of the duplicate chit is given by the piquet commander to his "bayonet file" or "road sentry" whom he leaves, conspicuously placed on the road, to point out the position of the piquet to the rearguard commander. This "bayonet file" is a double sentry with fixed bayonets. When no troops are passing along the road the "bayonet file" should remain with their piquet. This is the only exception to a very sound rule on the North-West Frontier that less than four rifles should never be left alone without close support.

The following are some points that are of special importance

**Piquet advancing.** in the advance to a piquet position:—

- (a). Before moving, the piquet commander must make quite certain that there is no doubt as to the position he is intended to occupy.
- (b). He must then point out this position to his men as accurately as possible.
- (c). A file must be left on the road with a chit and with orders to keep a constant look-out towards the piquet. This file should fix bayonets in order to give them greater confidence and to show the rearguard commander who they are. They should place themselves in a suitable position on the road for these purposes.
- (d). The advance should be in extended order, in one or two lines according to the nature of the ground, with rifles loaded. In scrub or broken ground bayonets should be fixed and safety catches forward.
- (e). Always advance up spurs and avoid re-entrants.



- (f). Just before reaching the crest collect the men, fix bayonets and rush the top silently, taking care to avoid undue exposure on the crest.

The question of formation in the actual advance, in one or two lines according to the nature of the ground, is one that is open to endless discussion. The truth of the matter is that the ground and the nature of our enemy vary so much in frontier warfare, that it is both unwise and impossible to lay down any fixed rule as to the formation to be adopted.

In some of the Frontier Militia Corps, who are certainly experts in this sort of work, the usual procedure is to leave about half the strength of the piquet on any good covering position about 600 yards from that selected for the piquet whilst the remaining portion continues the advance, covered when necessary by the fire of the first half. This may be called an advance in two lines and is quite sound where a suitable covering position is available, though 600 yards is perhaps too much and about 400 would be better.

The principle of advancing or retiring by "bounds," the objective of each such "bound" being made good before the next is initiated, is as applicable to this kind of warfare as to any other.

Having considered the advance to a piquet position we now come to the actual occupation of that position.

The general principles involved are much the same as those referred to in dealing with piquets for protection when at rest under "Camps and Bivouacs;" but the application of those principles will be modified by the different conditions under which we are working; daylight instead of the darkness of night, and the consequent possibilities of co-operation with other piquets instead of absolute self dependence, and so on.

The following are points of special importance in the occupation of a piquet position.

- (a) Every man should lie down under cover and take a good look round before moving.



- (b) The piquet commander should select a commanding position with good fields of view and fire, not necessarily the exact position pointed out to him from the road. It is obviously impossible for an advanced guard commander on the road to know as much of the ground as will the piquet commander when he has actually climbed up to it.
- (c) The piquet commander should then post the men of the piquet in groups under natural cover so that they can watch all approaches to their position and all dead ground. That is to say, every man should be allotted an alarm post. A road piquet is usually safer and tactically stronger by day if the men are scattered in groups of some 4 to 6 men under natural cover and within easy hail of the piquet commander, than if they are all crowded into a sangar. A badly built sangar is useless and a good one takes a long time to build. Any sangar is certain to draw fire, is difficult to retire from unseen, and the field of view from it is limited. This is one of the main points in which the protection of a road piquet by day differs from that of a night piquet.
- (d) We are told in Field Service Regulations Part I, Section 146-2, that "piquets must..... at once entrench themselves, even when posted for a very short time." That is, all natural cover should be improved, especially that facing danger points, though care should be exercised to avoid improving cover that the enemy might utilize when the withdrawal of the piquet begins. It is always sound to improve what cover there may be in a piquet position. And a sangar, if built for possible night use, need not necessarily be occupied by day.
- (e) All work must be done silently and with as little exposure as possible.



**Frontier Mountain Warfare.**

- (f) All dead ground within the vicinity of the piquet position should be carefully searched.
- (g) A sentry should be posted to keep a look-out towards the bayonet file on the road.
- (h) If out of sight of the road a detached group, or subsidiary piquet, must be posted as a connecting link between the piquet and the bayonet file.
- (k) The piquet commander must examine carefully the probable line of withdrawal of his piquet, sending groundscouts down for this purpose if necessary. He should explain thoroughly to all ranks the proposed dispositions for the withdrawal.
- (l) All the above details having been provided for, the men must be kept well concealed, every man on the alert and all unnecessary movement must be checked.
- (m) The nearest officer must be informed at once if the enemy are seen collecting anywhere in the vicinity.

On reaching the end of a day's march, in the absence of  
**End of day's march.** orders to the contrary, the advanced guard  
commander is responsible for piqueting the  
approaches to the new camping ground until relieved by night  
piquets.

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## **ORGANISATION IN THE FIELD IN FRANCE AND GALLIPOLI.**

BY

CAPTAIN H. M. LEAPMAN, 13TH RAJPUTS.

For those who have still to experience for the first time Trench Warfare, the following notes from my experiences, firstly with an Indian Regiment in France, and afterwards with a K. I. Battalion in Gallipoli, may be instructive.

The comparison in organisation of British and Indian Units in the field will disclose a very similar system. I shall, therefore, deal with the various points of organisation as I found them, without differentiating between British or Indian Units. The organisation in France differed in one great respect from that in Gallipoli, in that troops relieved from the trenches in France get complete rest right away from the trenches and the enemy's fire except when in Brigade Reserve; while those in Gallipoli were actually never out of range of the enemy's guns, and generally not out of range of his rifle fire.

The reason is obvious. In Gallipoli there was little depth in the ground gained, so that ships were the only safe refuge; the depth of ground being insufficient to allow units getting out of range of enemy's guns while on land.

In France the several bases were in the country and were connected up to the trenches by rail, motor transport and cart. In Gallipoli the base was overseas at Mudros so that our communications depended entirely on ships and could not actually be called secure.

After being brought in a London motor omnibus from  
**Communications.** General Headquarters to the "railhead" of  
**France.** our particular command, several of us went from "railhead" to "refilling point" with the Army Service Corps Mechanical Transport. It was a fine sight to see the mechanical transport for two divisions on the same road. In our case it meant about 106 motor lorries one behind the other, each motor lorry having a maximum capacity of three tons. On



arriving at "refilling point", I was taken in the regimental cart drawn by the Army Service Corps horses and was driven to the Quarter Master's quarters, where all cooking was then being done for the regiment. From here I had to go up on foot to the regiment, which, at this time, was in Divisional Reserve, and was being heavily shelled in a village some two miles behind the trenches. My kit consisting of a blanket and waterproof sheet was carried by my new orderly. This, I was told, was all which could be taken into the trenches where the regiment expected shortly to be sent from their "Tang" billets. (Tang = close).

Now in Gallipoli when we first landed at Helles, the officers took a certain amount of spare kit in a valise or kit bag, but the men's kit bags were collected and left behind at Mudros together with a reserve of men to act as first reinforcement. At our second landing at Anzac, officers and men alike were only allowed kit which they themselves could carry. As there was no transport available on the Peninsula for carrying officers' and men's kit, regimental "Dumps" were established at convenient points, where spare kits (packs usually in case of men) were left when units proceeded into the trenches. If units, on being relieved in the trenches were moved to another part to rest, they were first taken to their regimental "Dump", to pick up their spare kit. As units were only kept in the trenches for a few days both at Helles (where we as a K. I. Battalion were supposed to be getting accustomed to trench warfare and Turkish bullets) and Anzac men did not suffer to any extent from lack of kit, because upon being relieved they could be sure of change of a shirt from the "Dump". Lack of opportunity for a wash was greatly felt as the sea was the only available bath, and except at night, bathing had to be forbidden in the majority of suitable bathing places on account of the enemy's shrapnel, which was sure to be opened upon any party of bathers who collected on the fore-shore. Drinking water was very precious so could on no account be used for washing. All drinking water had to be brought up to as near



the firing line as possible in water carts. Organisation in the trenches in France and Gallipoli was practically the same.

The relief of trenches was carried out by companies (or  
**Trenches.** Double Companies in the case of the Indian Army). The Commanding Officer ordered the companies to relieve other companies at certain times, and the Company Commander marched his command into the part of the trench which he had previously inspected, and which he was to relieve. He then took over sentry posts, snipers posts, listening posts, and ammunition beyond the 250 rounds allowed per man, bombs, and flares etc. Having satisfied himself that all was correct and having enquired concerning the attitude of the enemy, position of telephones and their connecting wires, position of enemy's machine guns etc., he would sign for the trench stores and the relieved company would then march out of the trenches. Life in the trenches itself was somewhat dull, being periodically relieved however by the enemy's "strafe" of shell fire. When in France, in my part of the trenches it usually began daily at 8 a.m., and consisted usually of two or three hours intermittent shelling from all kinds of guns, from the 5.9 Howitzer or "Woolly bear" to the "pipsqueak" or "whizz-bang." The calibre of the latter, when I was there, had not been determined for certain, but I understood was fired from a 12-pounder or a horse artillery gun. The shell consisted of a mixture of high explosive and shrapnel, and was exploded by percussion fuse and one could not hear it until it actually burst. A somewhat alarming gun at first, as one suddenly found several sand bags displaced or oneself covered with earth and stones without the slightest warning. Cooking was usually done by individuals. Later on, I understand, messing by platoons was given a trial, but it was not found to be a great success. Reliefs were carried out in the same way both in France and Gallipoli, but where I personally happened to be in France it was necessary to carry them out by night, whereas in Gallipoli, on account of the configuration of the ground and of the particularly good communication trenches (taken from the Turks in the majority of cases),



they could usually be carried out by day. In France all ranks carried one day's emergency iron ration and one days' ordinary ration. In Gallipoli two day's emergency iron rations.

In France, the trenches which I was in had been captured from the enemy at Neuve Chapelle and were very well built. There were numerous dug-outs and the enemy had taken every precaution to make themselves as comfortable as possible, even to the extent of having glass windows to some of them, while quite a number of them had stoves. Their dug-outs were built under the parapet, so that when we took them over they were under our parados. It is advisable, I think, to dig them under the parapet to prevent the throw forward from shrapnel hitting the front of the "dug-out". It was difficult to drain trenches at the time of year I was there (March) and before I left the Royal Engineers were supplying boards (duck-walks) to place at the bottom of the trenches to keep the men's feet as dry as possible.

The Royal Engineers had just begun to supply uprights and cross pieces for "dug-outs" about the same time. It was found that by allowing men to dig under the parapet or parados, without putting in supports was dangerous, as the roofs and sides fell in whenever a shell fell near.

The type of "dug-out" designed by the Royal Engineers (for which uprights and cross pieces were provided) was 5 feet frontage by 8 feet in depth. Corrugated iron with two feet of loose bricks or stones on top was considered proof against shrapnel. The best shrapnel proof-top to a dug-out was found to be broken pieces of brick, corrugated iron, or wood, the former naturally preferred, with a layer of sand-bags, and two feet of earth was also considered proof against shrapnel except a burst on impact. In Gallipoli, "dug-outs" were seldom built except for temporary shelter from the sun, which was very hot in July and the first part of August. All earth work including improvement and extension had to be carried out at night, except the small amount which could be done from under cover. The Turks seldom shelled our front line trenches, but preferred to suddenly open fire on



places where troops were supposed to be at rest, or upon water fatigue parties (some of the wells being out in the open).

The beach was also a popular objective for their guns, especially the "River Clyde" and "W" beach; probably because they thought as they were landing places, they were also base depots of food and ammunition.

At Anzac the Australians had built some splendid trenches, amongst them being some in very difficult ground at the various posts:—Quinn's, Courtney's, Steele's in the Monash Valley.

The posts were just below the crest and so below the enemy's trenches, in most cases, and a great deal of tunnelling had been necessary. In one or two places the enemy's trenches were only 12 or 15 yards away and wire-netting had been fixed up above the parapet to prevent the Turks throwing bombs into our trenches. This involved, however, especially good bomb throwing on our part, as the bomb had to be thrown vertically over wire-netting some 10 or 12 feet high.

The majority of the valleys, such as Monash Valley, Sazli Biet Dere etc. (Dere in Turkish—Valley) were commanded by the fire from the Turkish trenches. Large sandbag redoubts or traverses were therefore built at short intervals across the Dere to act as cover. In some cases communication trenches were dug back into the hill on either side from one redoubt to the other, if the redoubts or traverses gave insufficient cover.

The number of sentries detailed was, as a rule, by night one in every three men and by day one in every six men, but of course, circumstances altered this rule. For instance, if the enemy was very quiet and was known to be unfit for an offensive, the number of sentries was reduced. In the trenches:—

1. Rifles were inspected daily.
2. Magazines were always kept charged with safety catch up.
3. Men not doing "sentry-go" had to have their rifles handy, and were on no account to put them in dug-outs.
4. Men were always to wear their equipment (but could



## ***Organisation in France & Gallipoli.***

loosen it when resting) and could always take off their packs. With Indian troops they had to wear their belts, side arms and bandoliers.

5. Boots were not to be taken off without permission.
6. Putties were allowed to be taken off at the discretion of the Company Commander.
7. Bayonets were always fixed between standing to at dusk and dawn.

In Gallipoli it was soon found that regimental bombers were quiet insufficient for the bombing work re-

### **Bombing.**

quired in an attack. The reason for this was the numerous lateral trenches met with, and also on account of the heavy losses bombers naturally suffered owing to their being foremost in the fight. In my own Division we were, therefore, ordered early in August to form the following bombing parties. Each company was to find and train (quite separately from those under regimental arrangements) three non-commissioned officers and 18 men. They were divided up into three equal parties each under a non-commissioned officer. I understand that later on in France Company Commanders trained 40 bombers each in addition to the same number of regimental bombers.

The general idea was that when the advance took place, each company should have sufficient parties to operate down the numerous trenches met with leading to a flank. Each party was organised as follows:—

1. Bayonet men with fixed bayonets in front, who had both the offensive and defensive role of finishing off any men with whom they closed, and also of defending their party in a hand to hand scrap with bayonets.
2. Two bombers with as many bombs as they could carry in their hands.
3. Between the bombers and the bomb-carriers came the commander of the party.
4. Then two bomb-carriers carrying bombs in sacks or haversacks with which to replenish their bomb throwers. Bombers and bomb-carriers carried extra boxes



of matches and tapers for the now obsolete jam-pot bombs.

Both the Huns and the Turks were very good at this form of warfare. The latter were often  
**Sniping.** found up trees covered with leaves hidden by loose branches etc., or concealed among bushes, behind our lines after our advance. They were usually well supplied with food and water, and if not caught when their provisions were finished, came and gave themselves up. I had one very good instance which goes to prove how, by good organisation and untiring surveillance, one's own snipers could be trained to quite outmatch the Turks. I held a front line of trench some ten days in August above the "farm" at the head of the Argyl Dere. One of my subalterns was a keen shot, so I handed the instruction of my snipers over to him. Within the week it was quite possible for anyone of us to walk round the trenches and pop one's head over the parapet for a look round, as my group of snipers held complete mastery over the Turks. My snipers, by constantly watching the enemy's snipers' positions and the exposed parts of their trenches and communication trenches, were enabled to bring such a well-directed fire upon them whenever a target appeared that in a few days time our snipers completely dominated the Turks. Not only were their snipers prevented from using their sniping posts, but we also prevented all traffic during the day along the exposed parts of the Turkish line. One excellent way of sniping which we practised under less advantageous circumstances, was for a good shot to get ready at the present through a loop hole, taking his sight on a spot where a sniper had been located. Another man then stationed himself some 8 or 10 yards away with a periscope and when the sniper's head appeared to take a shot (very often at the periscope itself) he shouted out to the man at the loop hole. Several of my snipers claimed victims in this way.

In Gallipoli, my Commanding Officer, who had previously commanded a battalion in France,  
**Orderlies.** instituted a system of orderlies, which had



proved very successful in his previous command and which, I think, is worth consideration by those who have found no solution for the very difficult question of communication between regimental Headquarters and Company Commanders.

One orderly was detailed by each company daily to report to the Commanding Officer. It was his business to be acquainted with the Company Commander's whereabouts. Another orderly was detailed likewise to remain with each Company Commander, who knew the Commanding Officer's "dug-out" or billet and the nearest way to it. In this way, many hours were saved which might have been wasted by orderlies being sent, who neither knew their Commanding Officer's nor Company Commander's positions, nor the nearest way to them.

At dusk and half an hour before dawn, every one stood to arms for half an hour; that is to say, bayonets were fixed and all were in their places ready to resist any sudden attack.

Machine guns were depended upon chiefly by German and Turk for the defence of his trenches. They were usually cunningly concealed and were very numerous. It always appeared to me the flash protector was a necessity. During March last year I was put in charge of the Brigade Machine Guns one night to try and stop the Huns' working parties from constructing certain trenches and defensive positions. Sights were aligned during the day, and each unit was given a certain sector as its objective. I fired at fixed times throughout the night, but next morning had an awful "strafe" from howitzers on my machine gun positions for my trouble. Evidently my machine guns had been marked down by flashes.

Again, at Walker's Ridge, Anzac, on the 7th August last year, when the 1st (Australian) Light Horse Brigade tried to force the "Baby" position. The officers of the units in this Brigade had endeavoured by every means in their power to locate the enemy's machine guns. When the attack



came, the 8th and 10th Light Horse, who were the only two units to go over the parapet (one after the other), 'were met with an awful fire from (some thought more) twenty or twenty-five machine guns. My own unit was in support with the 9th Light Horse and coming up the communication trench it was impossible to hear any one speak on account of the din from their machine guns. I may also add that the Australian officers were particular adepts at finding out the strength or weakness of an enemy's position. I quote this instance as one which goes to prove how difficult it is to locate or estimate the number of machine guns for artillery preparation before attacking.

Great importance was attached to sanitation in the trenches both in France and Gallipoli. Latrines

**Sanitation.** were dug several yards back from a trench or communication trench, usually in a T-shape; one side of the top of the T being used and filled in when necessary, and then the other side was used. Empty biscuit tins were supplied, which were emptied daily by a Sanitation Squad into a deep hole and then filled in, lime being supplied by the Quarter Master for fouled ground, etc.

In Gallipoli flies were a great curse, and at Helles, when my Division relieved the 29th Division in July, flies swarmed everywhere. Many dead were still lying just outside the trenches, and as the Turks had buried their dead previously in and around these trenches, which we had captured from them, the state of the trench in the middle of a hot day can scarcely be realised. Severe punishment was meted out to any man fouling the trench itself.

All empty tins, paper, etc. were collected by fatigues as soon as a meal was over, and thrown into a refuse pit.

In France and Gallipoli on marching in or out of trenches men carried marching order and 250 rounds

**Kit.** ammunition per man.

2. In France picks and shovels were part of trench stores and were taken over as part of them.



3. In Gallipoli picks and shovels were carried by units or kept by Royal Engineers near Brigade Headquarters.
4. Very pistols were carried by officers.
5. Flares were part of trench stores.
6. One waterproof sheet was carried by each man.
7. In France rubber boots were kept as part of trench stores in bad weather whenever possible.

In conclusion I should like to say that I have only related what I actually saw and that since I was in the field I believe many innovations have been brought out in France. I am told that now every trench has its "duck-walk." Trench Stores are kept listed in a "Log-Book"---Light railways run to within a short distance of the firing line—Shrapnel proof helmets have been issued etc. etc.

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## "GRAPHS" AS ROUTE REPORTS.

35

MAJOR L. A. BETHUNE, *General Staff College.*

1. **Characteristics of the Country.** The topography of the North-Eastern Frontiers of India and in the Northern portions of Burma, is such that military operations undertaken within their area are involved in difficulties hardly to be experienced elsewhere.

Clothed in the densest jungle from base to summit the mountains rise in a meaningless maze of steepness from the plains often to the skyline. Climbing and descending themselves in an arbitrary fashion which only partially serves the wants of main mountain ranges. They are separated by deep gorges and torrents full of rapids, inadequately bridged with iron chains as primitive as to vividly suggest the small nature of the inhabitants. Nor does closer acquaintance with the natives and their habits remove the impression: the few paths which exist in this mountainous tangle are more like the runs of animals than the means of human progression: they slip straight down to the valley bottom and climb straight up the top one skyline to the ridge, and disappear into the green void beyond. As used only as is required by the splay feet of the naked natives who lope along them, their gradients are such as to necessitate the use of hands as well as feet—and indeed to warrant even the use of a Mishmi using his path, one ceases to wonder at his extraordinary activity.

Paths like these, crossing such a country, often have to contend in obstacles: clefts, cliffs, rock formations and such a variety of beds. A quick way of negotiating these—and therefore, from a jungle-man's point of view—is to cut a strong tree to the required direction, prop and wedge it, and then have a large iron wire used to give a hold for fingers and toes. Boulder surfaces are unsuitable to such treatment, are crossed either by a large vine-creeper stretched from bank to bank down and across which the



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BY

MAJOR L. A. BETHELL, QUETTA CADET COLLEGE.

**1. Characteristics of the Country.** The topography of the North-Eastern Frontiers of India, and of the Northern portions of Burma, is such that military operations undertaken within their area are involved in difficulties hardly to be experienced elsewhere.

Clothed in the densest jungle from base to summit, the mountains rise in a meaningless tangle of abruptness from the plains often to the snowline, dividing and subdividing themselves in an arbitrary fashion which only partially obeys the control of main mountain ranges. They are separated by deep rivers and torrents full of rapids, inadequately bridged with contrivances so primitive as to vividly suggest the simian nature of the inhabitants. Nor does closer acquaintance with the Abors and Mishmis remove the impression; the few paths which exist in this mountainous tangle are more like the runs of animals than the means of human progression; they dip straight down to the valley bottom and climb straight up the opposite cliff-face, top the ridge, and disappear into the green void beyond. As broad only as is required by the splay feet of the naked savages who lope along them, their gradients are such as to necessitate the use of hands as well as feet—and, indeed, to watch an Abor or a Mishmi using his path, one ceases to wonder at his monkey-like activity.

Paths like these, crossing such a country, inevitably abound in obstacles; clefts, cliff-faces, rock formations and faults, torrent beds. A quick way of negotiating these—and effective from a jungle-man's point of view—is to fell a stout tree in the required direction, prop and wedge it, and then hack steps in it sufficient to give a hold for fingers and toes. Broader streams, not susceptible to such treatment, are crossed either by a single cane-creeper stretched from bank to bank, down and across which the



traveller slides, or by a slender framework suspended from two or more such canes. Collapse of either means instant death in the millrace below.

Descriptions running into pages would hardly give an adequate idea of the physical obstacles with which military operations in such a country are faced. The two accompanying photographs of parts of the Kamang and Lu-Mang valleys are only two out of many which could be taken. But the steepness of the hillsides may be gathered from the fact that whenever extensive clearances by burning have been made in the upper hills, the earth, deprived of the support of tree-roots and unable to uphold its own weight, lapses into landslides which scar the landscape in every direction.

**2. Survey Maps.** Maps of the country have been made, with great labour, by the Survey Department. But a map at 4 miles to the inch is of little help to a commander when planning his movements, when a distance of 100 yards may contain an obstacle which will hang a column up for an hour. Nor does a measured distance on a map mean much when that distance may, as it often does, stand on end.

Time, therefore, is what matters. A day's march ceases to consist of miles on a map, but is the distance which can be climbed, scrambled, slid, and otherwise worried through between dawn and dusk by a column of laden men in single file.

**3. "Graphs."** With time, therefore, supplanting distance, and gradient displacing measurement in plan, the writer has, during two years' work on the North-Eastern Frontier, invented a system of "graph" route-reports to be used in conjunction with survey maps of the country. This shews the day's march in *section*, instead of in *plan*.

**4. Use.** Take a sheet of paper, say a sheet of lined foolscap with 32 lines on it, and divide it up into squares by vertical lines, say 20 of them. Result, a sheet of paper in squares—*vide* A. Now: lay the sheet sideways, and, commencing at the left hand bottom corner with figure  $\pm 0$  (sea-level), mark off 250's of feet for each division up the side of the page till 5000 is



reached at the top. Similarly, mark off the intervals along the bottom with quarters of an hour, and hours, till 8 hours are reached at the right-hand end. Put the sheet away and commence the day's work:—

Take (*a*) a wrist watch, (*b*) prismatic compass, (*c*) pocket watch-aneroid to read to 15,000 ft. a. s. l. in intervals of 50's; and a notebook. Before setting out along the route path to be reported on, take its general bearing *e. g.* up and down the spurs running into a main valley whose direction is apparent, and note your aneroid's reading for the altitude. Write both down. Then travel steadily up and down the day's journey, making notes of change of altitude at bottoms and tops of all except minor climbs. Note condition of path, condition and nature of crossings of obstacles and rivers, and anything else which you may know is of value to the column commander for whom you are reporting. Put a *time* (hour and minute), against every entry, but only with reference to actual distance travelled—*e. g.* if you stop for an hour for lunch and a pipe in the middle of the day, make a note of the time at which you stopped and the time you start again. Accommodate your pace to that of a laden man, and, with this object, take with you one or more fully laden coolies—possibly your own kit and rations and those of your escort. Have with you a "kotoki" or interpreter, and a local savage: he will give you names for most of the rivers and localities—the one piece of intelligence discernible in these savages being their power of naming places and things, and adhering to the name.

Make a note of any important change of compass-bearing in the path such as when the path leaves the main valley spurs and climbs the watershed, etc. though as a rule the path goes straight ahead over all obstacles.

When camped, take out your squared sheet and, commencing with the aneroid reading of the morning's start, mark in the successive altitudes opposite (*a*) their *number* on the left of the paper, and (*b*) their *time* of occurrence, at the bottom. Join up these points with (1) red ink, where the going was



good—(2) black, where it was really bad—not just ordinarily vile like most of this travelling is—or (3) in green ink when presenting no particular features. Sizeable rivers and streams crossed should be shewn intersecting the route, the name being written in colour in accordance with what the crossing was like. Similarly with villages when any are passed, according to their attitude, hostile, hospitable, etc.

Mark in the one or more compass bearings, along the top, opposite the times where they occur. Then, neglecting all green entries, balance out the comparative claims of black and red, in your "graph", and put in the heading in the corresponding colour. All this helps your chief's glance-of-an-eye notion of what you want to convey. You can also, if you wish, work out the actual ratio of good to bad, in the bottom, by counting squares in which red, or black, occur, and you can also add up totals of climbs and descents. It all helps.

You can thereupon send in your picture without any further comment. Your chief will take your whole meaning. Unless you like to fill in an I. B. Form 62, *vide* below B.

**5. Proof.** Diagrams usually depend for their graphic value on an exaggeration of heights to distances, as they would otherwise be too flat to convey any meaning. That these "graphs" represent what you *actually* have to climb and descend, and are not only theoretical is proved by what follows:—(1) Take your bottom left-hand group of squares, of which group one side is a thousand feet, one side is an hour. A laden coolie (the slowest man, and therefore the pace-governor of a column) can climb 1000 feet in an hour—an established fact in jungle columns. (2) Furthermore, join the bottom left-hand corner to the top right-hand corner of this square, to shew your path climbed. The result is what? A slope of 1 in 1, 45 degrees, which is what the North Eastern Frontier hills mostly stand at.

(b). That it is immaterial for these "graphs" whether you are going uphill or downhill is proved by the fact that after a certain degree of difficulty is reached, it takes a laden man as long to descend a hill as it does to climb it. Indeed it is often



easier to climb a bad obstacle than to come down it. Therefore values on the diagram may be taken as equal, whether ascending or descending.

6. The "fog of war" is nothing compared to that mental paralysis which seems to descend on some men when hemmed in by solid jungle, by severe physical obstacles, and by the ever possible hostility of the inhabitants. Therefore great things are hoped from these "graphs" which, in their obviousness, should go far to clear up the pre-occupations of the column commander.

7. **Examples.** The attached examples are rough copies of some of the "graphs" carried out by the writer in the Abor country, and will explain much that is obscure in the text.

Since they mostly adhere to the general line of the Kamang, or are otherwise identifiable by maps, the compass-bearings are omitted.

8. **Note.**—If any further proof be needed of the physical strain attendant on operations in this grotesque land:—

Take the single stretch, up the Kamang Valley, from Bremson to Roro. Look at the graphs. Add together the number of feet *climbed*, only, in each day's march (see bottom left-hand corners). Multiply by  $11\frac{1}{2}$  stone (the weight of a British Officer, jungle-thin, with all his equipment on). You will find that between Bremson and Roro that officer has expended 1957 foot-tons of energy in lifting himself through the 11 marches—or the exact amount of work done in lifting two tons of metal from the bottom to the top of the Eiffel Tower.

If, when it reached the top, it were allowed to fall freely, its impact, on arrival at the bottom, would suffice to penetrate a modern battleship from conning-tower to keelson, and sink it with all hands.



**"Graphs" as Route Reports.**Route No. 1

(B.)

**FROM MU-PLOS VILLAGE—(SA-PO VALLEY)—  
TO MU-LAPA.***Authority and date. Captain L. A. Bethell, 10th Gurkha  
Rifles. February 1913.*

**Epitome.** Times taken are those for a small force of 50 rifles and 100 coolies and are exclusive of all halts. All distances in time; reckoning of mileage impossible and misleading, in a country where most of the miles stand on end.

Distance in feet above sea level, throughout.

| March<br>Numbers. | DISTANCE.          |          | From                              | To                                 | Description.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|--------------------|----------|-----------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Inter-<br>mediate. | Total.   |                                   |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1                 | 5½ hrs.            | 5½ hrs.  | Mu-Plos.                          | Mu-Fereang river<br>Camp.<br>1420' | Leave camp N. W. and cross Sa-8'long river by log bridge. Ascend steeply 800' past E. end of village by narrow path through old jhums for 1 hour to where good jhum path goes off to right. Follow along contour excellent going for ¼ hour. Here direct Mu-Fereang path goes off to E. Keep to left (northwards) and continue 1 hour where leave main jhum path and descend steeply down a spur for 2000' to bed of Sapo R. 1½ hours. Continue along R. bank of stream, over rocks, very bad going, ¾ hour. Here cross to left bank on bamboo bridge and rise onto open flats. Continue ¼ hour and camp on bank overlooking stream—good, for 200 men. |
| 2                 | 9½ hrs.            | 14½ hrs. | Mu-Fereang river<br>camp<br>1420' | Mu-Bearang camp<br>3200'           | Leave camp Northwards—and descend on to rocks of river bed. Continue for ¼ hour, v. bad going, and rise on to flats (Here Mu-Fereang path goes off to right). Continue along flats ¼ hour (unlimited camp ground, if necessary)—good going but getting more complicated towards end where descend on to river-bed rocks again—¼ hour bad going, and then rise sharply on to a v. bad "monkeying" negotiating a river cliff above river bed for ¼ hour dangerous for laden coolies in places. Thence 4 hours (3 miles) of execrable going over large slippery boulders in river bed with one or two cliffs to be climbed over. At                       |



(B.)

| March<br>Numbers. | DISTANCE.          |               | From                        | To               | Description.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|--------------------|---------------|-----------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Inter-<br>mediate. | Total.        |                             |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                   | 3 hrs.             | 19½<br>hours. | Mu-Bearang<br>camp<br>3200' | Mu-Lapa<br>3950' | <p>1650' climb straight out of river bed up v. steep spur through jungle, for 2½ hours to Kotal at 3050'—whence level and slight rise for ¼ hour to 3650', second Kotal. Here emerge into extensive open jhums with view of villages Mu-Sasa and Mu-Kir on opposite side of valley. Descend gently ½ hour through fields, to 3200' where camp in sloping fields on spur near water, about ¼ m. short of, and opposite, Mu-Bearang Village. (A bad march).</p> <p>Without going to village, leave camp and travel N. W. along spur, excellent path through open jhums for 1½ hours to spot 3100'. Here descent less gradual, but travel along ridge and enter scrub jungle. Road continues excellent for ½ hour descending to small open clearing at 2500'. Descend 10 mins. steep, on to open flats, excellent camping ground if wanted. 10 mins. steep descent into Sam-Pi river bed at 1920'. Stream bridged strongly with bamboos, but hardly fordable even in winter. (At this point, path joins in from "point 1650'" in stage "2" above, believed to travel along Sa-Po river bed all the way, not traversed by our column, but if anything like the previous portion in "2" it is probably execrably bad.) Rise 100' steep on to flats—and continue along dead level for the hour. Here short drop, and Sa-Po R. net close below on left, nearly touched at 1950', where there are several remarkable groves of village bamboos ½ hour on to Sa-Rep stream strongly bridged log and handrail 2000'. Here start climb up steep spur to lowest houses of Mu-Lapa—1½ hours 3400' level of first houses. Rise through village ½ hour to top 3950'—good path. Camp in open space among bamboos 200 yards beyond top—most houses of village, water plentiful.</p> |



***“Graphs” as Route Reports.*****Route No.** .....**(B.)****FROM** .....**To** .....**Authority and date** .....**EPITOME:—**



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 3700  
 3600  
 3500  
 3400  
 3300  
 3200  
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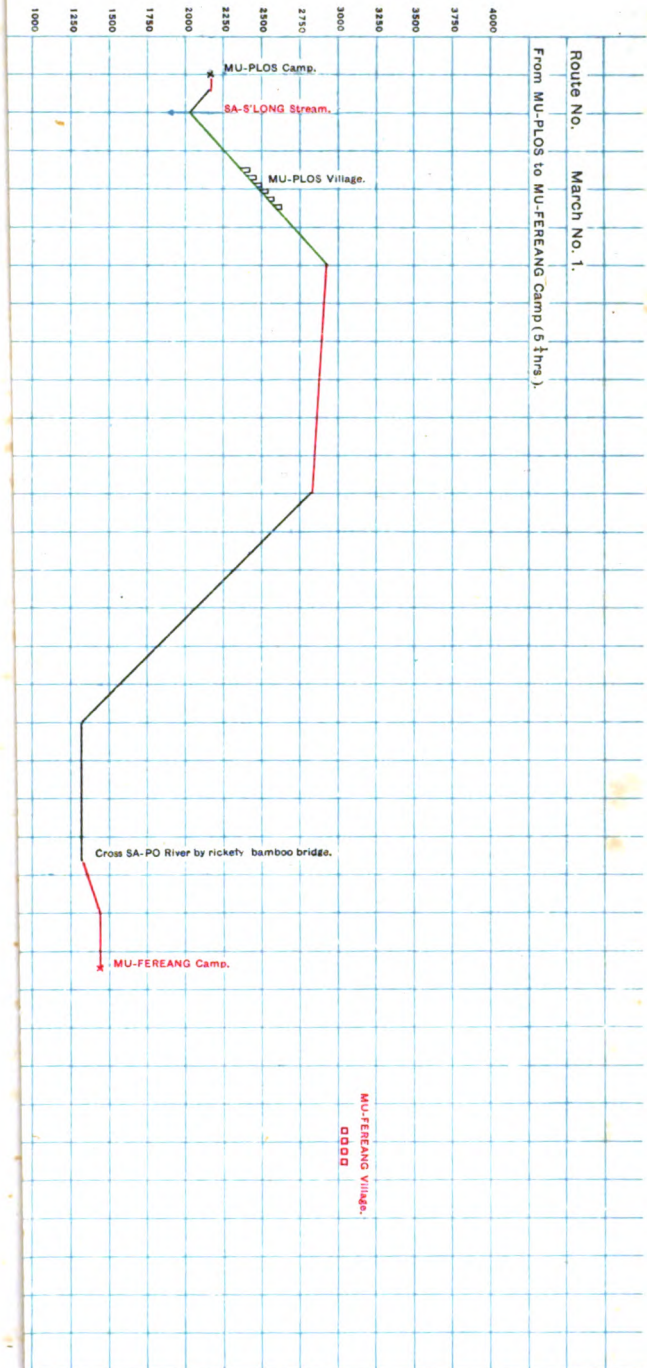
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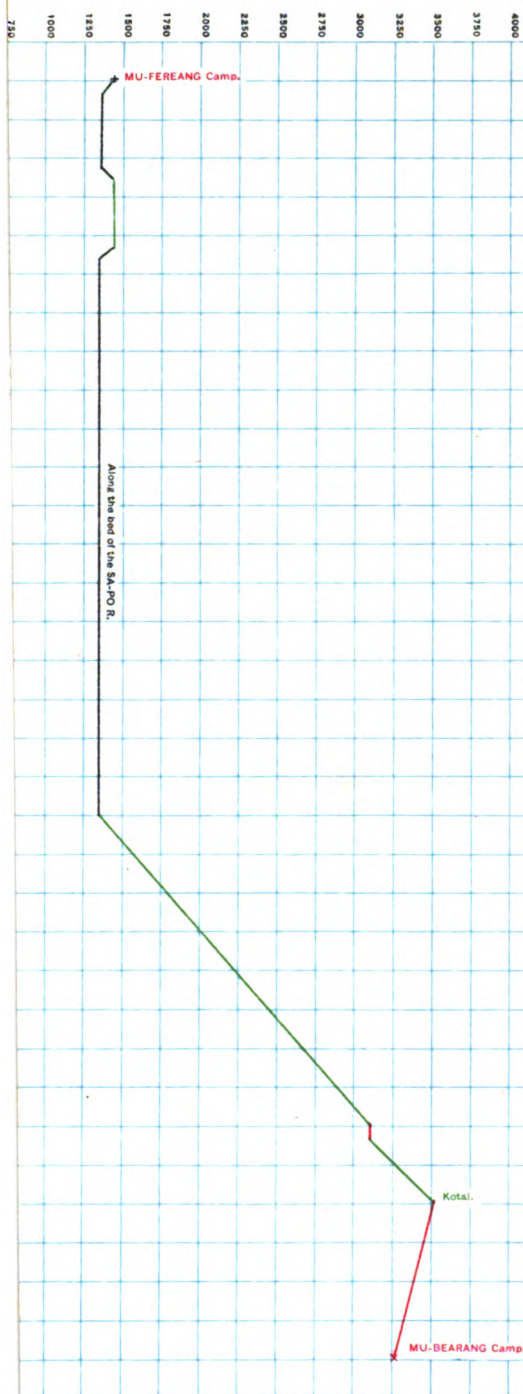






Route No.      March No. 2.

From MU-FEREANG Camp to MU-BEARANG (84 hrs.),





traveller slides, or by a slender framework suspended from two or more such canes. Collapse of either means instant death in the millrace below.

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**"Graphs" as Route Reports.**Route No. 1

(B.)

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TO MU-LAPA.**

*Authority and date. Captain L. A. Bethell, 10th Gurkha  
Rifles. February 1913.*

**Epitome.** Times taken are those for a small force of 50 rifles and 100 coolies and are exclusive of all halts. All distances in time; reckoning of mileage impossible and misleading, in a country where most of the miles stand on end.

Distance in feet above sea level, throughout.

| March<br>Numbers. | DISTANCE.          |          | From                              | To                                 | Description.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|--------------------|----------|-----------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Inter-<br>mediate. | Total.   |                                   |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1                 | 5½ hrs.            | 5½ hrs.  | Mu-Plos.                          | Mu-Fereang river<br>Camp.<br>1420' | Leave camp N. W. and cross Sa-S'long river by log bridge. Ascend steeply 800' past E. end of village by narrow path through old jhums for 1 hour to where good jhum path goes off to right. Follow along contour excellent going for ¼ hour. Here direct Mu-Fereang path goes off to E. Keep to left (northwards) and continue 1 hour where leave main jhum path and descend steeply down a spur for 2000' to bed of Sapo R. 1½ hours. Continue along R. bank of stream, over rocks, very bad going, ¾ hour. Here cross to left bank on bamboo bridge and rise onto open flats. Continue ¼ hour and camp on bank overlooking stream—good, for 200 men. |
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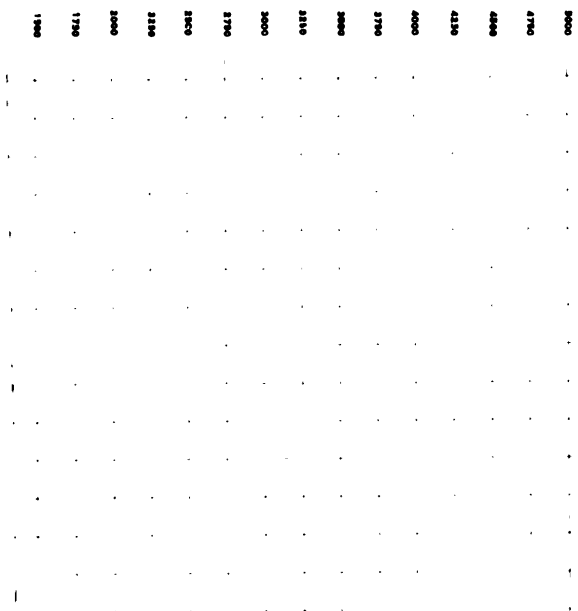
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| March<br>Numbers. | DISTANCE.          |               | From                        | To               | Description.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|--------------------|---------------|-----------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Inter-<br>mediate. | Total.        |                             |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                   | 3 hrs.             | 19½<br>hours. | Mu-Bearang<br>camp<br>3200' | Mu-Lapa<br>3950' | <p>1650' climb straight out of river bed up v. steep spur through jungle, for 2½ hours to Kotal at 3050'—whence level and slight rise for ¼ hour to 3650', second Kotal. Here emerge into extensive open jhums with view of villages Mu-Sasa and Mu-Kir on opposite side of valley. Descend gently ½ hour through fields, to 3200' where camp in sloping fields on spur near water, about ¼ mi. short of, and opposite, Mu-Bearang Village. (A bad march).</p> <p>Without going to village, leave camp and travel N. W. along spur, excellent path through open jhums for 1½ hours to spot 3100'. Here descent less gradual, but travel along ridge and enter scrub jungle. Road continues excellent for ½ hour descending to small open clearing at 2500'. Descend 10 mins. steep, on to open flats, excellent camping ground if wanted. 10 mins. steep descent into Sam-Pi river bed at 1920'. Stream bridged strongly with bamboos, but hardly fordable even in winter. (At this point, path joins in from "point 1650'" in stage "2" above, believed to travel along Sa-Po river bed all the way, not traversed by our column, but if anything like the previous portion in "2" it is probably execrably bad.) Rise 100' steep on to flats—and continue along dead level for the hour. Here short drop, and Sa-Po R. met close below on left, nearly touched at 1950', where there are several remarkable groves of village bamboos ¼ hour on to Sa-Rep stream strongly bridged log and handrail 2000'. Here start climb up steep spur to lowest houses of Mu-Lapa—1½ hours 3400' level of first houses. Rise through village ½ hour to top 3950'—good path. Camp in open space among bamboos 200 yards beyond top-most houses of village, water plentiful.</p> |

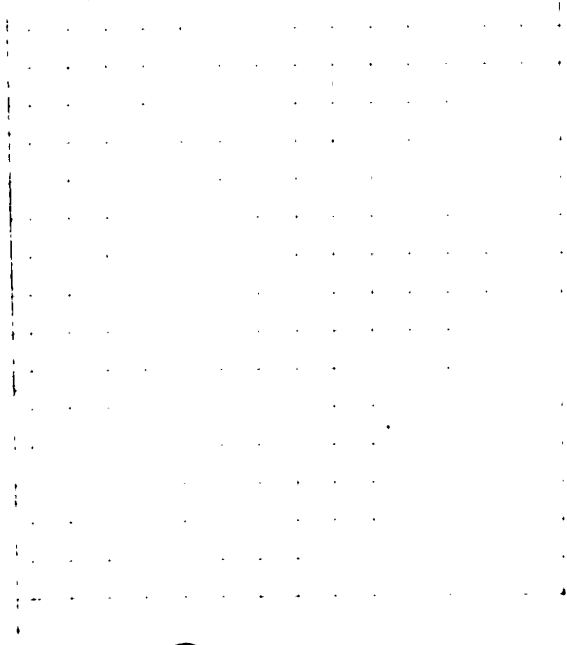


***“Graphs” as Route Reports.*****Route No.**.....**(B.)****FROM** .....**To** .....**Authority and date** .....**EPITOME:—**





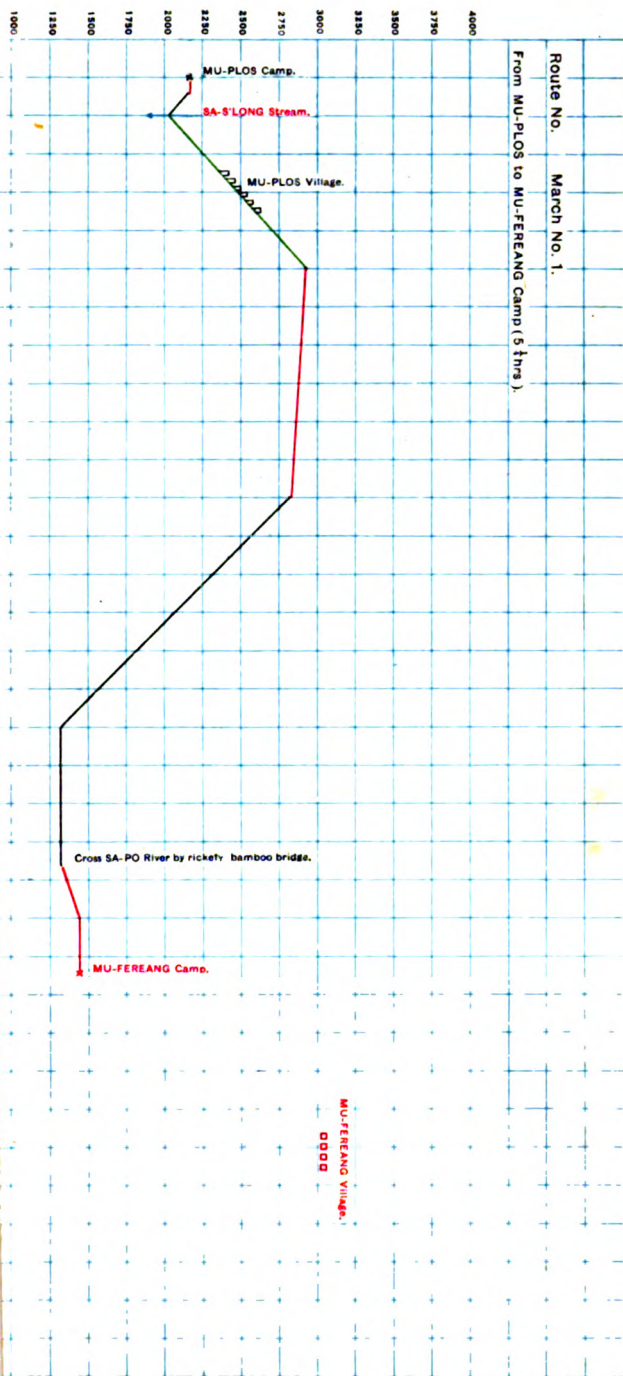
is of these graph forms can be ordered from  
 intelligent printer--perforated to tear out.  
 ble waterproof backs. This is such a sheet.











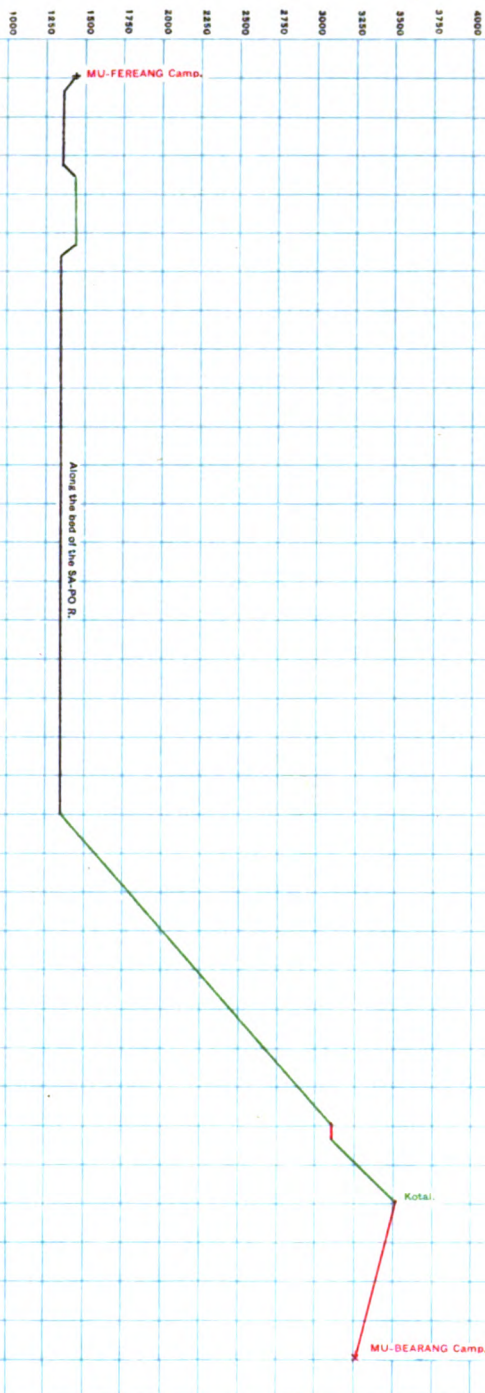






## Route No.      March No. 2.

From MU-FEREANG Camp to MU-BEARANG (at hrs.).

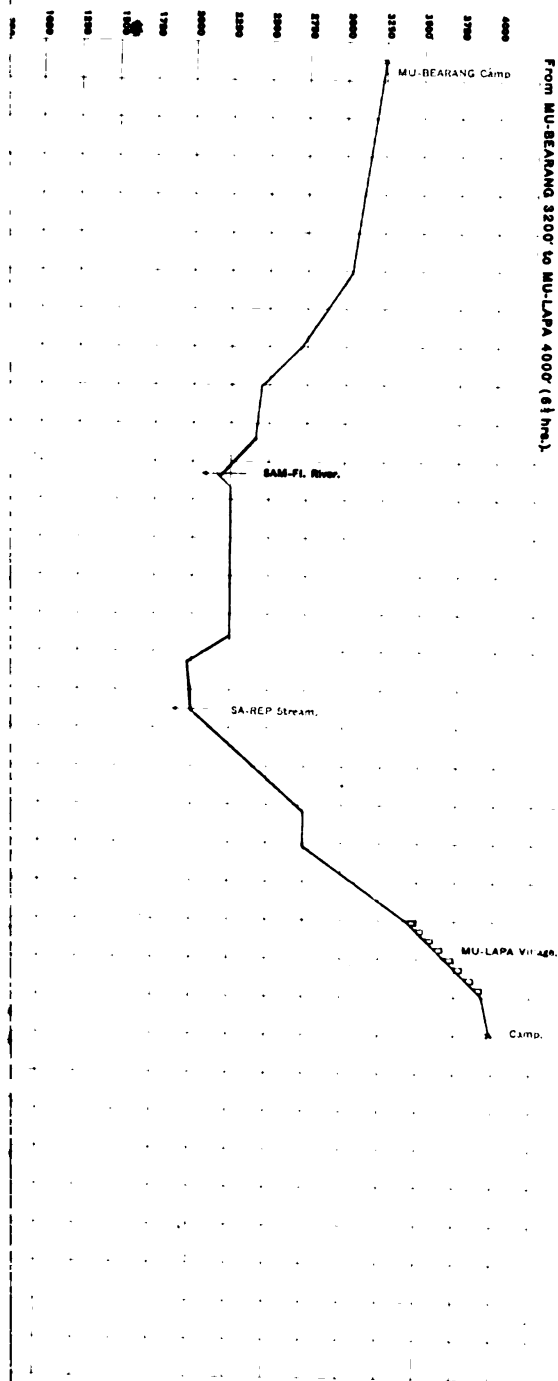








Route No. March No. 3.  
 From MU-BEARANG 3200' to MU-LAPA 4000' (81 mi.)











Kamang.



Lu-Mang.

Village.

Landslide.

parts of the Kamang and Lu-Mang Valleys."-p. (2).









Kamang.



Village.

Landslide.

Lu-Mang.

parts of the Kamang and Lu-Mang Valleys."-p. (2).





20





of the Sapo River, between Mu-Fereang and  
Mu-Bearang—see graph.



Column on the march.



unusual piece of path, in Mishmi Land.

100 yards may contain an obstacle which will hang a column  
up for an hour." p. (2).







## ***"Graphs" as Route Reports.***

145

**(B.)**

[illegible]



## MAPS OF THE FUTURE.

BY

MAJOR H. L. CROSTHWAIT, R. E.

---

*"For I dipt into the future, far as human eye could see;  
Saw the vision of the world, and all the wonders that would be;  
Saw the heavens fill with commerce, argosies of magic sails,  
Pilots of the purple twilight, dropping down their costly bales;  
Heard the heavens fill with shouting, and there rain'd a ghastly  
dew  
From the nations' airy navies grappling in the central blue."*

---

It is not intended in this note to touch on the question of the value of aerial photographs for obtaining special information regarding enemy operations in the field, as photography has already proved itself invaluable for this purpose. What we propose to consider is the practicability of applying photographs, taken from aeroplanes in time of peace, to the production of maps for military or any other purposes for which they may be required.

The present war has altered all our ideas on the subject of the scale of maps. Certain novel classes of military operations have arisen which require maps on a much larger scale, showing much more detail, than was formerly necessary; so much so, that in countries which have no larger scale maps than, say, 1 inch to one mile a demand will certainly arise for maps on at least double that scale showing, with considerable exactness, the greatest amount of detail the scale can bear. A map which exhibits the detail features of the ground, as true as possible to nature, is of great importance to the aviator, not only for the purpose of finding his way, but also for the rapid and precise location of enemy works and movements enabling him to communicate exact information regarding their position. This kind of detail can only be mapped, employing ordinary survey methods, by the expenditure of much time and money. The question then is



whether a certain portion of the information required for modern map-making could not be obtained better and quicker by means of aerial photographs.

Shortly stated the ordinary method of surveying for the topographical maps of India, scale 1-inch to one mile, consists of (a) the determination of the position and height of certain points fixed on the ground either by triangulation or traversing, (b) using these fixed points as a basis the detail features are surveyed with a plane-table, and (c) the inequalities of the ground are depicted by means of contours. Operations (b) and (c) are usually carried out simultaneously by the same person while operation (a) is separate and distinct from the others. The exactness with which operation (b), that is the mapping of the shape of the various physical features of the ground, can be carried out depends on the scale of survey in the field, the skill of the surveyor and draftsman, and the fineness of the process by which the resultant map is reproduced. In the case of one-inch maps the representation of physical features of the ground must be so generalised that it is not possible, except perhaps in a country possessing very few natural features, to show that minuteness of detail which is necessary for the modern military map if it is to be used for artillery registration purposes in conjunction with aviation. For that reason we shall have to produce something much better than the present one-inch maps, if not of the whole country certainly of special selected areas. If, therefore, we wish to be prepared for the future we must boldly face the problem of rapidly making maps on say 3-inches to one mile of large areas showing an amount of detail never before attempted.

The suggestion here made is that in the future this exact detail will be best obtained from aerial photos, taken under suitable conditions. The different stages leading up to the production of maps by this means may be sketched somewhat as follows :—

1. To bind together the various portions and serve as a basis for the future map, triangulation in hilly country and



### ***Maps of the Future,***

traversing in the plains will still be necessary, but will have to be extended in order to provide the larger number of fixed points required by the increase of scale. These points will be marked on the ground in such a way that they will appear in the photos taken from above.

2. Photos will then be taken from aeroplanes of the area under survey. The scale of these photos will be governed by the height at which the exposures are made and the focal length of the camera.

3. The resultant negatives will then be sent to a specially equipped photographic studio where they will be printed on suitable paper, all to the same scale in case it has not been possible to preserve a uniform scale throughout the series. An appropriate number of photographs will then be joined up to form a convenient sized field section and the heights of the fixed triangulated points will be written in.

4. The field section now forms a kind of picture map of the ground containing far more detail than any other method would give. But while the shape and form of the features can be very clearly seen in photos of this kind it is not always easy to say definitely what they represent on the ground. It will, therefore, be necessary to take these congregated photos into the field for purpose of identification of the various topographical details and for writing in place names and the classification of roads, etc., and at the same time, if in the hills for inserting contours in the ordinary way. For the the purpose of contouring if the photographs have been taken when the sun is at a suitable angle, the shadows cast, as well as the presence of full detail, will greatly assist this work. In the plains of India identification could be very quickly done by riding over the ground—there would be no contours to put in. We now have a field-section corresponding to the finished plane-table of an ordinary survey.

5. The next stage is to undertake the usual fair drawing of the map, employing the recognised symbols for various objects. This will be done on photographic blue prints of the



finished field-sections, in a manner appropriate to the scale of the final map, a process familiar to all surveyors.

6. The fair map will then be reduced to the required scale and reproduced by the most suitable method.

In the above outline details have been omitted. No doubt actual practice would develop many modifications with a view to improving and facilitating the various operations.

Going a step further, the question might be considered whether the future map will not consist of a picture of the ground, as seen from above, suitably reproduced to scale direct from aerial photographs, on which certain additional matter such as heights and contours, names of towns and localities, had been surprinted and roads and other objects property classified. There would be no technical difficulties, in the reproduction of such a map, which could not be overcome. The airman would have before him an actual picture of the physical features of the ground as they really appear and not a conventional representation of them as on an ordinary map. Such a picture map would greatly facilitate the rapid and precise location of enemy objects, which could be immediately communicated by means of reference squares. Probably a production of this kind, if properly carried out, would make a better map for certain military purposes than the best that could be produced by the usual methods—anyhow the experiment is well worth trying.

Looking into the future we seem to see the day, not very far distant, when every survey organisation will have its own aviation branch appropriately equipped for taking aerial photographs to be subsequently reproduced as maps of far greater military value than any existing map. The expert map-maker can recognise in these photographs a wide field for the reproduction of maps on various scales not before available.

The practice of aviation may not yet be sufficiently advanced to carry on photographic survey work over a large extent of country, but judging by the recent rapid progress which has been made we feel confident that any difficulties which now stand in the way will soon be brushed aside. Is it not, therefore,



***Maps of the Future.***

expedient that we should prepare for the coming of these new methods by experimenting in the first instance on important military areas? It is only by the production, and testing in the field, of such maps that their value can finally be proved. Preparation in peace is the essence of success in war.

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## **TRANSLATIONS FROM RUSSIAN NEWSPAPERS.**

**"The Russky Invalid"**

*1st to 14th July 1916.*

### **German Artillery at Verdun.**

From prisoners' accounts and aerial reconnaissance the following figures of the number of German guns at Verdun have been arrived at by the French General Staff:—

- (1) *Extra-heavy guns* 40.
  - (a) 10 of 17 inch calibre (430 millimetres).
  - (b) Remainder of 15 and 12 inch (380 and 305 mm.) of Austrian make.
- (2) *Heavy Guns* 700.
  - (a) 215 of 8 inch (210 mm.) Approximate numbers.
  - (b) 430 „ 6 „ (150 „ ). „ „
  - (c) 55 „ 5 „ (130 „ ). „ „
- (3) *Medium and Light Guns* 1260.
  - (a) 860 of 4 inch howitzers (105 mm.) Approximate
  - (b) 400 „ 3 „ field-guns ( 77 „ ). numbers.

About 20 Divisions were employed against Verdun, whence it appears that the artillery concentrated was 1/5th above the normal establishment. In all attacks the heavy guns played the chief part in methodical destruction of the desired point. The medium and light guns were only used when the heavy ones were being moved.

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## **QUARTERLY SUMMARY OF MILITARY NEWS AND ITEMS OF INTEREST.**

### **ARMY HEADQUARTERS.**

**719. Publication of Articles in the Press forbidden.**—The following Army Order No. 212 of 1916, is republished

**I. A. O.**  
**9th October 1916.** for the information and compliance of those concerned. The portion in brackets should read “(In India, to the Chief of the General Staff, through the usual Channels),” in place of that already there:—

“With reference to paragraph 453, King's Regulations, officers and soldiers are forbidden, without special authority, to publish any article, whether purporting to be fiction or fact, which in any way deals with the war or with military subjects. Matter intended for publication should be forwarded to the Official Press Bureau, Whitehall, S. W., in the first instance (in India to the Commander-in-Chief). It must be submitted in duplicate and must be either type-written or in proof.”

**729. Officers.**—It is notified for information that the Government of India, with the approval of the Right Hon'ble the Secretary of State for India, have sanctioned the grant of permanent commissions in the Indian

**I. A. O.**  
**9th October 1916.**

**Army Department**  
**letter No. 9220, dated**  
**1st September 1916.**

Army, up to a total of 246, to selected officers of the Special Reserve, Territorial Force and New Armies, serving under the Imperial Government in India, and with Indian Expeditionary Force “D,” under the following conditions:—

- (a) The age of candidates on the date on which they are called to Army Service as commissioned officers shall not be more than 26 years.
- (b) All commissioned service in a regular unit rendered before and after the 5th August 1914 and all embodied commissioned service in the Special Reserve and Territorial Force, and commissioned service in the New Army, rendered since the 5th August 1914, will count for promotion and pension.
- (c) All service in the ranks in a regular unit, rendered before



and after the 5th August 1914 and all embodied service in the Special Reserve and Territorial Force and service in the New Army, in the ranks, rendered after the 5th August 1914, will count for pension only, as laid down in Article 540 (g) of the Royal Warrant for Pay.

- (d) Officers will join the Indian Army in the rank to which their length of service entitles them under the promotion rules of the Indian Army. Any higher rank which may be held will be surrendered.
- (e) Officers shall be unmarried.
- (f) Officers shall be on probation for the first year, but if found unsuitable for the Indian Army they may be reverted at any time within the first year to their original corps.
- (g) Officers will receive Indian Army rate of pay and allowances during the period of their probation.
- (h) During the period of probation officers will not be permitted to subscribe to Widows and Orphans Funds, but such subscription will be compulsory with effect from the date of permanent admission to the Indian Army.

2. Applications for these commissions must be made on the form which is printed as an annexure to this India Army Order.

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## REVIEWS OF BOOKS.

*The Military Map Elements of Modern Topography (French School of War); MacMillan 1916. Price Rs. 2-8 net.*

This book appears at an appropriate moment. The officer who wants a guide to the methods employed in the construction of French Military Maps and to the terms used therein will find it here, and incidentally by the perusal of this little book will acquire much interesting information about maps in general. The book, it is true, only consists of 130 pages of large print, interspersed with numerous diagrams and purports only to deal with elements, but it is by no means superficial in its treatment of its subject. An alphabetical list of definitions and an index would have much increased the value of the book for reference.

The book is produced in a manner that is a credit to Messrs. MacMillan, with good paper, clear type and a generally attractive appearance. The draughtmanship and printing of the numerous diagrams are excellent.

On the last line of page 102, 14 metres is obviously a misprint for 4 metres.

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*Elements of Tactics; by Capt. O.A. Forsyth-Major, Royal Fusiliers.*

This book contains the substance of a series of lectures delivered before the officers of the 7th Reserve Infantry Brigade. These lectures appear to have been well prepared and were no doubt valuable for the purpose for which they were intended, but we cannot recommend them in their present form. Field Service Regulations remain the authority on all but very recent developments, for which the various official pamphlets should be consulted. The historical instances given are sketchy, not of much value, and in cases inaccurate, while there are several statements to which exception may reasonably be taken.

Published by Gale and Polden, Ltd., London, Aldershot and Plymouth. Price 4 s net.

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*Courts of Inquiry; by Capt. Kenneth G. Thomas, B.A., LLB. (Cantab).*

A very sound and useful little book. The want of a publication of this kind has been felt for a long time past.

Published by Gale and Polden, Ltd. Price 2s net.



*The Year Book of Wireless Telegraphy and Telephony, 1916.*  
*The Wireless Press, Ltd., Price 3-6 net.*

This is a book of reference, annually issued, which every one interested in Wireless Telegraphy will find it useful to possess.

In the beginning of the book there again appears "The Record of the development of Wireless Telegraphy" this year enlarged, and brought up to date. The text of the International Radio Telegraphic Convention, concluded in London, 5th July 1912, is given, and also from the International Convention on Safety of Life at Sea (London 20th January 1914), the text of the articles governing Wireless Telegraphy, and of that part of the Regulations which are entitled Safety of Navigation. The Laws and Regulations of all countries using Wireless Telegraphy are here stated *in extenso*. These have suffered revision in all cases, owing to the peculiar conditions created by the war, so that their publication here is of especial usefulness. They are prefaced by an index, which much increases the facility of reference to them for practical purposes. Tables of the Wireless Telegraph Stations of the World, (A) Land Stations, (B) Ship Stations, and of the International and Alphabetical Call Letters are issued, subject to the warning that, owing to restrictions due to the Defence of the Realm Act, full accuracy in all cases cannot be guaranteed. These tables are issued in conjunction with the map of Wireless Stations, which is inserted at the end of the book.

Also useful for reference are the notes on International Time and Weather Signals issued from various stations throughout the world. These notes are given, subject to any modifications in the services described, which may have been caused by the war. There follow the Report of the Committee on Standardization, "Useful Formulae and Equations," the practical nature of which is sufficiently guaranteed by the name of Dr. J. Erskine Murray, a "Glossary of Terms", a "Dictionary of Technical Terms," and "Useful Data and Tables." The last section has been compiled as a result of the practical experience of the Marconi Company, and is likely to be very helpful to workers in Wireless Telegraphy. A list of Wireless Telegraph Patents applied for in 1915 is given, and also a list of the Companies engaged in the commercial development of Wireless at home and abroad. Biographical notices and an Obituary will be of interest to many. Sections of minor importance, including Code Signals and the Morse Code, con-



clude that main portion of the book, which is intended to have a practical every day use, as supplying information and facts for constant reference.

The special articles, both those of a technical nature and those of general interest, deserve more particular notice. "Photo Electric Phenomena," by Dr. J. A. Fleming, gives the striking results of certain experiments on the effects of light, particularly the ultra violet rays, on Wireless telegraphy, and leaves the impression that the influence of the sun's rays in wireless telegraphy is a factor yet to be dealt with, which may be the cause of many inexplicable vagaries. The title of the article by Dr. W. H. Eccles is "Capacitance, Inductance, and Wave Lengths of Antennae." He holds that "the calculation or measurements of the electro static capacitance and steady inductance of antennae encourages a wrong point of view, regarding the oscillations on wires with coils or condensers connected in series with them," and he develops his argument by means of a series of original abacs. The report of the Radio Telegraphic Committee of the British Association for the advancement of Science "shows that the disturbance to telegraphic work caused by Strays, or X storms, are usually coincident with, or closely anticipate barometric depressions.

There are two American technical articles, one on the "Progress of Radio telephony in the United States America in 1915 by Roy A. Weagant and on the "Measurement of Signal Intensity" by I. L. Hogan, Vice-President of the Institute of Radio Engineers United States America. In the former article there appears the following announcement by the American Telephone and Telegraph Company under date 22nd October 1915. "Transatlantic wireless telephony is an accomplished fact. Observers listening at the Eiffel Tower in Paris have heard speech sent out by engineers of the American Telephone and Telegraph Company from apparatus developed by that company and the Western Electric Company, and installed at Arlington Virginia.

The Problems of Interference are clearly set forth by Mr. Percy W. Harris, and have particular interest in this time of war.

Mr. Archibald Hurd's interesting article on the history of semaphore and flag signalling which is entitled "Intelligence in Naval Warfare," by a somewhat hackneyed literary device is made the means of lauding the triumphs of wireless telegraphy. Many of his readers will learn with surprise that the code of flag signals, which Nelson used at Trafalgar to make his last ever famous signal,



had only been invented by Sir Home Riggs Popham in 1800, and was issued for the first time to every ship in 1805 when Lord Nelson was about to join his fleet just before the battle of Trafalgar.

In "The Allies Strategy in 1915" Colonel F. N. Maude shows the meaning of the waiting policy of the Allies on the Western Front as contrasted with the activity of the Russians, and how the able strategy of the Grand Duke Nicholas was only prevented from attaining a great success by lack of munitions. It is Col. Maude's belief that the inception of the Gallipoli expedition was due to a direct request by Russia, whilst the attack in the Champagne and Loos region was a consequence of the German move in the Balkans. As regards wireless telegraphy Col. Maude points out how important it has been to us in maintaining our naval blockade, besides being a much employed means of communication with distant expeditionary forces.

"Wireless Waves in the World's War" by H.J.B. Ward, B.A., is, as is stated, a general survey of the activities of radio telegraphy during the War. Numerous interesting and some dramatic anecdotes are related. "Long Distance Services" is a history of the first beginning, of the succession of great achievements, and of the ever wider progress and extension of long distance wireless telegraphy up to the beginning of 1916.

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*The Mechanism of the Rifle at a glance. Price 6d. Gale & Polden, Ltd.*

This pamphlet, which deals with the Short Rifle, Lee-Enfield, Mark III, is one of the very best we have seen and shows by means of excellent plates and diagrams exactly what it purports to show, namely the mechanism of the rifle *at a glance*.

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*The First Annual Report of the Scots Company, Bombay Volunteer Rifles, 1915-16.*

The Scots Company of the Bombay Volunteer Rifles are certainly to be congratulated on their First Annual Report. It is exceedingly well got up and contains, in addition to a record of their first year's work, an account of the origin and formation of the Scots Company. The illustrations consist of four good photographic reproductions.







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Fitted with a serviceable Compass with luminous North and South Points, suitable for Day and Night use.

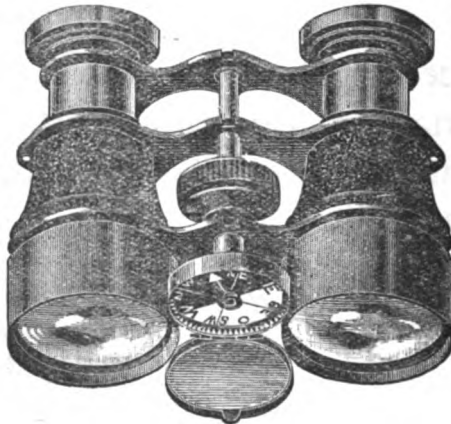
Height when Closed  $2\frac{1}{4}$  inches;

Diameter of Object Lens, 1 inch.

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Although compactness and portability are the chief features of the "Lynx," a wide and distinct field of view has not been sacrificed, but, on the contrary, increased.



Jointed Adjustable Bars and Hinged Lid Compass.

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# United Service Institution of India.

## PRIZE ESSAY GOLD MEDALLISTS.

*(With rank of Officers at the date of the Essay).*

- 1872...ROBERTS, Lieut.-Col. F. S., V.C., C.B., R.A.  
1873...COLQUHOUN, Capt. J. A. S., R.A.  
1874...COLQUHOUN, Capt. J. A. S., R.A.  
1879...ST. JOHN, Maj. O. B. C., R.E.  
1880...BARROW, Lieut. E. G., 7th Bengal Infantry.  
1882...MASON, Lieut. A. H., R.E.  
1883...COLLEN, Maj. E. H. H., S.C.  
1884...BARROW, Capt. E. G., 7th Bengal Infantry.  
1887...YATE, Lieut. A. C., 27th Baluch Infantry.  
1888...MAUDE, Capt. F. N., R.E.  
    YOUNG, Maj. G. F., 24th Punjab Infantry (especially awarded a silver medal).  
1889...DUFF, Capt. B., 9th Bengal Infantry.  
1890...MAGUIRE, Capt. C. M., 2nd Cav., Hyderabad Contingent.  
1891...CARDEW, Lieut. F. G., 10th Bengal Lancers.  
1893...BULLOCK, Maj. G. M., Devonshire Regiment.  
1894...CARTER, Capt. F. C., Northumberland Fusiliers.  
1895...NEVILLE, Lieut.-Col. J. P. C., 14th Bengal Lancers.  
1896...BINGLEY, Capt. A. H., 7th Bengal Infantry.  
1897...NAPIER, Capt. G. S. F. Oxfordshire Light Infantry.  
1898...MULLALY, Maj. H., R.E.  
    CLAY, Capt. C. H., 43rd Gurkha Rifles (specially awarded a silver medal).  
1899...NEVILLE, Col. J. P. C., S.C.  
1900...THULLIER, Capt. H. F., R.E.  
    LURBOCK, Capt. G., R.E., (specially awarded a silver medal).  
1901...RANKEN, Lieut.-Col. G. P., 46th Punjab Infantry.  
1902...TURNER, Capt. H. H. F., 2nd Bengal Lancers.  
1903...HAMILTON, Maj. W. G., D.S.O., Norfolk Regiment.  
    BOND, Capt. R.F.G., R.E., (specially awarded a silver medal).  
1904...MACMUNN, Maj. G. F., D.S.O., R.F.A.  
1905...COCKERILL, Maj. G. K., Royal Warwickshire Regiment.  
1907...WOOD, Maj. E. J. M., 99th Deccan Infantry.  
1908...JEUDWINE, Maj. H. S., R.A.  
1909...MOLYNEUX, Maj. E. M. J., D.S.O., 12th Cavalry.  
    ELSMIE, Maj. A. M. S., 56th Rifles, F. F., (specially awarded a silver medal).  
1911...Mr. D. PETRIE, M.A., Punjab Police.  
1912...CARTER, Major B. C., The King's Regiment.  
1913...THOMSON, Major A. G., 58th Vaughan's Rifles (F. F.)  
1914...BAINBRIDGE, Lieut.-Col. W.F., D.S.O., 51st Sikhs, (F. F.)  
    NORMAN, Major C. L. M.V.O., Q. V. O. Corps of Guides  
    (specially awarded a silver medal).  
1915...No award.  
1916...CRUM, Major W. E., Calcutta Light Horse.



## MacGREGOR MEMORIAL MEDALS.

—o—

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of May:—

(a) For officers—British or Indian—a silver medal.

(b) For soldiers—British or Indian—a silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution, who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.\*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

### *Note.*

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

---

\* *N. B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves; also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, such as Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.



# MacGregor Memorial Medallists.

*(With rank of Officers at the date of the Award).<sup>1</sup>*

1889...BELL, Col. M. S., V.C., R.E., <sup>2</sup>(specially awarded a gold medal).

1890...YOUNGHUSBAND, Capt. F. E. King's Dragoon Guards.

1891...SAWYER, Major H. A., 45th Sikhs.

RAMZAN KHAN, Havildar, 3rd Sikhs.

1892...VAUGHAN, Capt. H. B., 7th Bengal Infantry.

JAGGAT SINGH, Havildar, 19th Punjab Infantry.

1893...BOWER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).

FAZALDAD KHAN, Dafadar, 17th Bengal Cavalry.

1894...O'SULLIVAN, Major G. H. W., R.E.

MULL SINGH, Sowar, 6th Bengal Cavalry.

1895...DAVIES, Capt. H. R., Oxfordshire Light Infantry.

GANGA DYAL SINGH, Havildar, 2nd Rajputs.

1896...COCKERILL, Lieut. G. K., 28th Punjab Infantry.

GHULAM NABI, Sepoy, Q. O. Corps of Guides.

1897...SWAYNE, Capt. E. J. E., 16th Rajput Infantry.

SHAHZAD MIR, Dafadar, 11th Bengal Lancers.

1898...WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.

ADAM KHAN, Havildar, Q. O. Corps of Guides.

1899...DOUGLAS, Capt. J. A., 2nd Bengal Lancers.

MIHR DIN, Naik, Bengal Sappers and Miners.

1900...WINGATE, Capt. A. W. S., 14th Bengal Lancers.

GURDIT SINGH, Havildar, 45th Sikhs.

1901...BURTON, Major E. B., 17th Bengal Lancers.

SUNDAR SINGH, Colour Havildar, 31st Burma Infantry.

1902...RAY, Capt. M. R. E., 7th Rajput Infantry.

TILBIR BHANDARI, Havildar, 9th Gurkha Rifles.

1903...MANIFOLD, Lieut.-Colonel C. C., I.M.S.

GHULAM HUSSAIN, Lance-Dafadar, Q. O. Corps of Guides.

1904...FRASER, Capt. L. D., R.G.A.

MOGHAL BAZ, Dafadar, Q. O. Corps of Guides.



## **MacGregor Memorial Medallists—*contd.***

- 1905...RENNICK, Major F., 40th Pathans, (specially awarded a gold medal).  
MADHO RAM, Havildar, 8th Gurkha Rifles.
- 1906...SHAHZADA AHMAD MIR, Risaldar, 36th Jacob's Horse.  
GHAFUR SHAH, Lance-Naik, Q. O. Corps of Guides Infantry.
- 1907...NANGLE, Capt. M. C., 92nd Punjabis.  
SHEIKH USMAN, Havildar, 103rd Mahratta Light Infantry.
- 1908...GIBBON, Capt. C. M., Royal Irish Fusiliers.  
MALANG, Havildar, 56th Punjabi Rifles.
- 1909...MUHAMMAD RAZA, Havildar, 106th Pioneers.
- 1910...SYKES, Major P. M., c.m.g., late 2nd Dragoon Guards (specially awarded a gold medal).  
TURNER, Capt. F. G., R.E.  
KHAN BAHADUR SHER JUNG, Survey of India.
- 1911...LEACHMAN, Capt. G. E., The Royal Sussex Regiment.  
GURMUKH SINGH, Jemadar, 93rd Burma Infantry.
- 1912...PRITCHARD, Capt. B.E.A., 83rd Wallahjabad Light Infantry (specially awarded a gold medal).  
WILSON, Lieut. A. T., c.m.g., 32nd Sikh Pioneers.  
MOHIBULLA, Lance-Dafadar, Q. V. O. Corps of Guides.
- 1913...ABBAY, Capt. B. N., 27th Light Cavalry.  
SIRDAR KHAN, Sowar, 39th (K.G.O.) Central India Horse.  
WARATONG, Havildar, Burma Military Police (specially awarded a silver medal).
- 1914...BAILEY, Capt. F. M., I.A. (Political Dept.)  
MORSHEAD, Capt. H. T., R.E.  
HAIDAR ALI, Naick, 106th Hazara Pioneers.
- 1915...WATERFIELD, Capt. F. C., 45th Rattray's Sikhs.  
ALI JUMA, Havildar, 106th Hazara Pioneers.
- 1916...ABDUR RAHMAN, NAIK, 21st Punjabis.  
ZARGHUN SHAH, Havildar, 58th Rifles (F. F.)  
(Specially awarded a Silver Medal).





*The Year Book of Wireless Telegraphy and Telephony, 1916.*  
*The Wireless Press, Ltd., Price 3-6 net.*

This is a book of reference, annually issued, which every one interested in Wireless Telegraphy will find it useful to possess.

In the beginning of the book there again appears "The Record of the development of Wireless Telegraphy" this year enlarged, and brought up to date. The text of the International Radio Telegraphic Convention, concluded in London, 5th July 1912, is given, and also from the International Convention on Safety of Life at Sea (London 20th January 1914), the text of the articles governing Wireless Telegraphy, and of that part of the Regulations which are entitled Safety of Navigation. The Laws and Regulations of all countries using Wireless Telegraphy are here stated *in extenso*. These have suffered revision in all cases, owing to the peculiar conditions created by the war, so that their publication here is of especial usefulness. They are prefaced by an index, which much increases the facility of reference to them for practical purposes. Tables of the Wireless Telegraph Stations of the World, (A) Land Stations, (B) Ship Stations, and of the International and Alphabetical Call Letters are issued, subject to the warning that, owing to restrictions due to the Defence of the Realm Act, full accuracy in all cases cannot be guaranteed. These tables are issued in conjunction with the map of Wireless Stations, which is inserted at the end of the book.

Also useful for reference are the notes on International Time and Weather Signals issued from various stations throughout the world. These notes are given, subject to any modifications in the services described, which may have been caused by the war. There follow the Report of the Committee on Standardization, "Useful Formulae and Equations," the practical nature of which is sufficiently guaranteed by the name of Dr. J. Erskine Murray, a "Glossary of Terms", a "Dictionary of Technical Terms," and "Useful Data and Tables." The last section has been compiled as a result of the practical experience of the Marconi Company, and is likely to be very helpful to workers in Wireless Telegraphy. A list of Wireless Telegraph Patents applied for in 1915 is given, and also a list of the Companies engaged in the commercial development of Wireless at home and abroad. Biographical notices and an Obituary will be of interest to many. Sections of minor importance, including Code Signals and the Morse Code, con-



clude that main portion of the book, which is intended to have a practical every day use, as supplying information and facts for constant reference.

The special articles, both those of a technical nature and those of general interest, deserve more particular notice. "Photo Electric Phenomena," by Dr. J. A. Fleming, gives the striking results of certain experiments on the effects of light, particularly the ultra violet rays, on Wireless telegraphy, and leaves the impression that the influence of the sun's rays in wireless telegraphy is a factor yet to be dealt with, which may be the cause of many inexplicable vagaries. The title of the article by Dr. W. H. Eccles is "Capacitance, Inductance, and Wave Lengths of Antennae." He holds that "the calculation or measurements of the electro static capacitance and steady inductance of antennae encourages a wrong point of view, regarding the oscillations on wires with coils or condensers connected in series with them," and he develops his argument by means of a series of original abacs. The report of the Radio Telegraphic Committee of the British Association for the advancement of Science "shows that the disturbance to telegraphic work caused by Strays, or X storms, are usually coincident with, or closely anticipate barometric depressions.

There are two American technical articles, one on the "Progress of Radio telephony in the United States America in 1915 by Roy A. Weagant and on the "Measurement of Signal Intensity" by I. L. Hogan, Vice-President of the Institute of Radio Engineers United States America. In the former article there appears the following announcement by the American Telephone and Telegraph Company under date 22nd October 1915. "Transatlantic wireless telephony is an accomplished fact. Observers listening at the Eiffel Tower in Paris have heard speech sent out by engineers of the American Telephone and Telegraph Company from apparatus developed by that company and the Western Electric Company, and installed at Arlington Virginia.

The Problems of Interference are clearly set forth by Mr. Percy W. Harris, and have particular interest in this time of war.

Mr. Archibald Hurd's interesting article on the history of semaphore and flag signalling which is entitled "Intelligence in Naval Warfare," by a somewhat hackneyed literary device is made the means of lauding the triumphs of wireless telegraphy. Many of his readers will learn with surprise that the code of flag signals, which Nelson used at Trafalgar to make his last ever famous signal,



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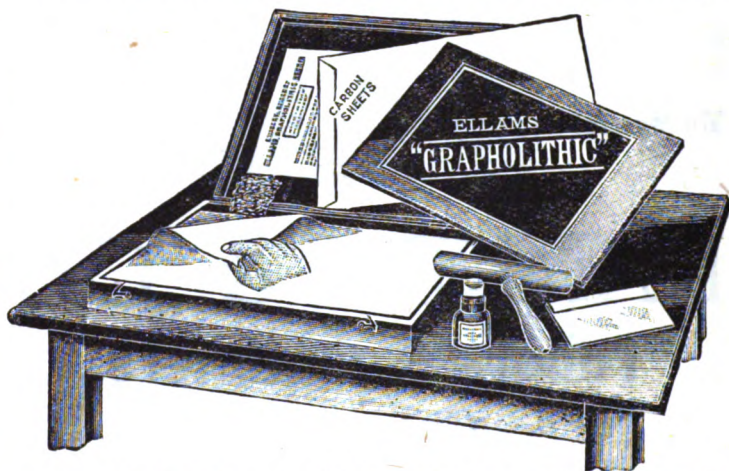
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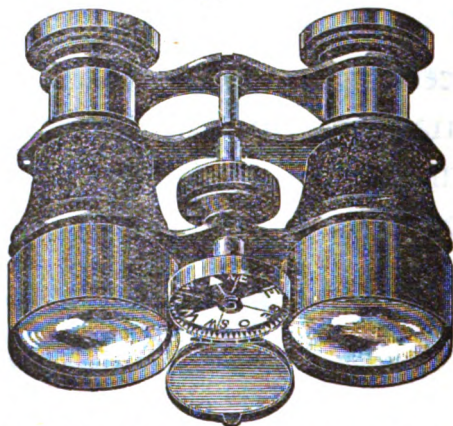
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| Rajputana ..                                  | Ajmere                           | Honorary Secretary,<br>Ajmere.                                                                  | Honorary Secretary,<br>Ajmere.                                 |
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| Bengal ..                                     | Calcutta                         | Sister, Calcutta<br>Telegram "Sister,"<br>Calcutta.                                             | Honorary Secretary,<br>Governor's Camp,<br>Bengal.             |
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


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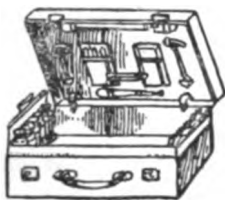
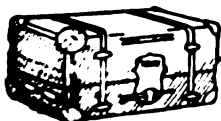
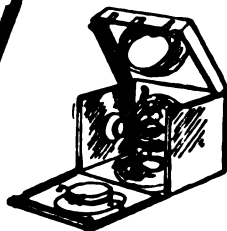
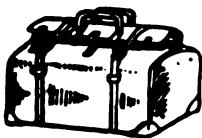
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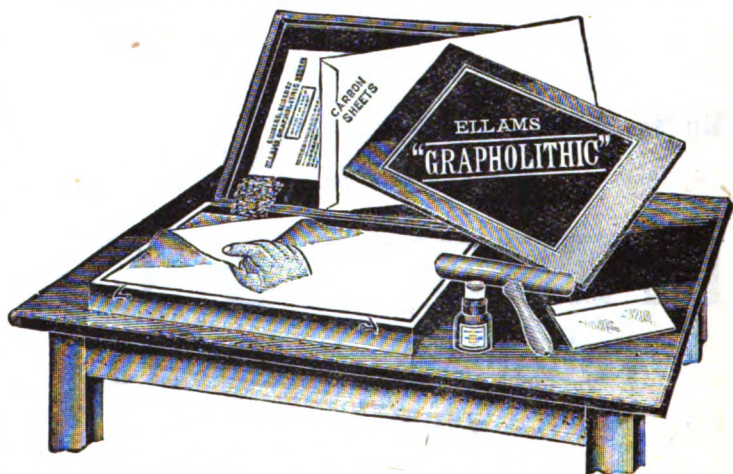
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APRIL 1917.

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| 2nd Lieut. S. R. Carroll          | Lieut.-Col. C. Simkins             |
| 2nd Lieut. A. F. Cambridge        | Capt. T. Ripley                    |
| Capt. J. D. Mackenzie             | Capt. J. O. Little                 |
| Major T. R. Nolan                 | 2nd Lieut. A. O'B. Webb            |
| Capt. R. L. Bliss                 | 2nd Lieut. R. B. Addis             |
| Lieut. L. J. Marriott             | 2nd Lieut. C. N. Howitt            |
| 2nd Lieut. R. S. Vipan            | 2nd Lieut. D. O. Nicolson          |
| Lieut. F. V. Devonshire           | 2nd Lieut. C. W. Saunders          |
| Capt. M. L. A. Gompertz           | 2nd Lieut. H. C. Smithers          |
| Capt. C. W. Jackson               | 2nd Lieut. H. E. Counter           |
| Lieut. J. Cook                    | 2nd Lieut. R. J. Gerard            |
| Lieut. A. E. J. Gawler            | 2nd Lieut. R. Douglas, I.A.R.      |



Capt. R. O. Beadle

2nd Lieut. V. F. Hampton

2nd Lieut. G. G. Davis

2nd Lieut. R. J. D. Teague

Major E. Tyndale-Biscoe

Lt.-Col. H. Barstow

## **II.—Tactical Problems.**

In order to assist officers working for tactical examinations, the Institution has schemes for issue to members only, at Rs. 5 each, which includes criticism and a solution by a qualified officer; 26 schemes are now available.

## **III.—Military History Papers.**

(1) In order to assist officers in the study of military history, the Institution has sets of questions on the following campaigns.

- (a) One paper on the Waterloo Campaign.
- (b) Three papers on Callwell's Small Wars.
- (c) Two papers on the strategy of Russo-Japanese War.
- (d) Five papers on the battles of the Russo-Japanese War.
- (e) Two papers on the Afghan War, 1879—80.
- (f) Two papers on the Crimean War.
- (g) One paper on the Indian Mutiny.
- (h) One paper on the Shenandoah Valley Campaign, 1861-62.
- (i) One paper on the Bohemian Campaign, 1866, to the Battle of Koniggratz, inclusive.
- (j) One paper on the Jena Campaign, 1806.
- (k) One paper on the Franco-German War, 1870.

The charge for these papers is Rs. 5 each, which includes criticism by qualified officers.

(2) Pamphlets dealing with the Shenandoah Valley Campaign from April 1861 to June 1862, the Bohemian Campaign, 1866 to the battle of Koniggratz inclusive, and the Battle of Liaoyang, can be obtained from the Secretary, Price Re. 1 each, or Re. 1-2-0 per V. P. P.

## **IV.—Maps.**

The Institution has for sale a variety of large scale maps (1 and 2 inches to one mile), price As. 8 each.

They are specially useful for instruction in map reading, tactical schemes and in preparation for examination, and can be had either of English or Indian country.



**V.—Premia for Articles in the Journal.**

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

**VI.—Contributions to the Journal.**

With reference to Army Regulations, India, Volume II, paragraph 483, and King's Regulations, paragraph 453, as amended by Army Order 340 of 1913, intending contributors to the Journal of the United Service Institution of India are informed that action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee. Contributors are, therefore, responsible that the sanction of their immediate superior has been obtained, and this should be noted on all articles sent for publication. Articles need not be submitted in duplicate.

Contributors must have their articles either typed or printed.

**VII.—Library Catalogue.**

The library catalogue revised up to 1st January 1916 is now available. Price Rs. 2 or Rs. 2-4-0 per V. P. P. A list of books received each year is published with the January Journal.

**VIII.—Gold Medal Prize Essay, 1916-17.**

The Council have chosen as the subject for the Gold Medal Essay for 1916-17 the following :—

**“The Possibility of utilizing India as a military asset to the Empire more in accordance with her size and population than at present.”**

The following are the conditions of the competition :—

(1) The competition is open to all gazetted officers of the Civil administration, the Navy, Army and Volunteers, who are members of the U. S. I. of India.

(2) Essays must be printed or type-written and submitted in *triplicate*.

(3) When a reference is made to any work, the title of such work is to be quoted.



## Secretary's Notes.

v

(4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto, written on the outside, and the name of the competitor inside.

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June, 1917.

(6) Essays will be submitted for adjudication to referees chosen by the Council. No medal will be awarded if the Council consider that the best essay is not of a sufficient standard of excellence.

(7) The name of a successful candidate will be announced at a Council Meeting which will be held in August or September, 1917.

(8) All essays submitted are to become the property of the United Service Institution of India *absolutely*, and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

(9) Essays should not exceed about 15 pages of the Journal when printed, exclusive of any appendices, tables or maps.

### IX.—Indian Army Lists.

The Institution is prepared to supply members and units with manuscript, type-written or printed pages from old Indian Army Lists since 1800. Endeavours will also be made to procure extracts from the "Registers" prior to that date. The following will be the rates charged:—

|                              |     |     |     |   |        |   |
|------------------------------|-----|-----|-----|---|--------|---|
| Manuscript copy of each page | ... | ... | Re. | 1 | 0      | 0 |
| Type-written copy per page   | ... | ... | Rs. | 2 | 0      | 0 |
| Printed copy, per page       | ... | ... | Rs. | 3 | 0      | 0 |
| Binding if required          | ... | ... |     |   | Extra. |   |

If facsimile of *type* is required the price of printed pages will range from Rs. 5-8 to Rs. per page, according to the amount of matter on each page, the higher rate being charged for pages similar to those of the Indian Army in the current Army List.

### X.—War Maps.

War Maps are on view in the Reading Room of the Institution, with the positions of the troops, so far as is known, marked with flags, in each theatre of War.



**XI.—Annual Subscriptions.**

The Committee again invite the attention of members to the large amount of unnecessary correspondence and expense annually caused to the Institution by the difficulty in getting in the annual subscriptions.

If members wish to resign their membership they have only to notify the fact in writing to the Secretary. If this is not done, it is presumed that they wish to remain members and the Journal will continue to be posted regularly to their last known address.

Much inconvenience and unnecessary correspondence is caused by the failure of members to notify their changes of address or to make any arrangements for the Journal to be sent after them, when they change their address.

**XII.—Missing Journals.**

The set of Journals of the U. S. I. of India in our library is deficient of Volume XII for the year 1883; also the copy of Volume I, for the years 1871-72, which we have is incomplete. The Committee would be glad if anyone in possession of the above copies will kindly communicate with the Secretary.

**XIII.—Amendments to Rules of the U. S. I. of India.****SECTION VI—MEMBERSHIP.**

*Paras 2 and 3 of the above section have been amended to read as follows:—*

*Para 2.*

“Life Members of the Institution shall be admitted on the following terms:—

Rs. 75 *plus* entrance fee Rs. 10 (*see* para 4) or Rs. 85 in all.

*Para 3.*

“Ordinary members of the Institution shall be admitted on payment of an entrance fee (*see* para 4) of Rs. 10 on joining, and an annual subscription of Rs. 5 *to be paid in advance*. The period of subscription commences on 1st January.”

*Para 3 (a)*

All members of the Institution resident in Simla for not less than 90 days during the year will be charged an *additional* subscription of Rs. 5 per annum from the 1st January 1917.



**XIV—Presentations to the Institution.**

The Council gratefully acknowledge the receipt of the following books and publications:—

Presented to the Library by the Hon'ble Mr. J. P. Thompson,  
I. C. S., Chief Secretary to Government, Punjab:—

Punjab Government Records, 8 volumes.

Punjab Castes by Sir Denzil Ibbetson, K. C. S. I.

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Presented by S. V. FitzGerald, Esq., I. C. S.; Defence Acts of the following Dominions:—

Union of South Africa. (One copy).

New Zealand. (Five copies).

Commonwealth of Australia. (One copy).

Territorial Forces Act (Great Britain.)

Territorial Force Regulations.

Regulations of the Inns of Court O. T. C.

2 Reports on Examinations for Certificates "A" and "B".

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Presented by the publishers, Messrs. MacMillan & Co., Ltd. :—

*Sea Warfare* by Rudyard Kipling.

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Presented by the Imperial Russian Consulate-General, Calcutta :—

*Reports of the "Extraordinary Commission of Enquiry into German atrocities".*

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# **- United Service Institution of India.**

## **PATRON.**

His Excellency the Viceroy and Governor-General of India.

## **VICE-PATRONS.**

His Excellency the Right Hon'ble The Lord Pentland, P.C., G.C.I.E., Governor of Madras.  
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The Hon'ble Sir J. S. Meston, K.C.S.I., Lieutenant-Governor, United Provinces of Agra and Oudh.

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Lieut.-General Sir A. A. Barrett, K.C.B., K.C.S.I., K.C.V.O.

## **MEMBERS OF THE COUNCIL, 1916-17.**

### *Ex-officio Members*

- |                                                         |                                                   |
|---------------------------------------------------------|---------------------------------------------------|
| 1. Lieut. General Sir G. M. Kirkpatrick, K.C.S.I., C.B. | 6. Surg.-Genl. T. J. O'Donnell, C.B., D.S.O.      |
| 2. The Hon'ble Major-Genl. A. H. Bingley, C.B., C.I.E.  | 7. Maj.-Genl. W. B. James, C.I.E., M.V.O.         |
| 3. The Hon'ble Mr. A. H. Grant, C.S.I., C.I.E., I.C.S.  | 8. Maj. Gen. J. McN. Walter, C.B., D.S.O.         |
| 4. The Hon'ble Mr. C. B. H. Fell, C.I.E.                | 9. Capt. W. Lumsden, C.V.O., C.I.E., R.N., A.D.C. |
|                                                         | 10. Brigadier-General A. Skeen, C.M.G.            |

### *Elected Members.*

- |                                                      |                                       |
|------------------------------------------------------|---------------------------------------|
| *1. The Hon'ble Sir E. D. MacLagan, K.C.I.E., C.S.I. | *5. Colonel H. A. Young.              |
| 2. Major-General Sir R. C. O. Stuart, K.C.S.I.       | *6. Lieut.-Colonel W. St. C. Muscroft |
| *3. Brigadier-General C. W. G. Richardson            | *7. Br.-General T. M. Luke, D.S.O.    |
| *4. Brig.-Genl. P. Holland-Pryor, M.V.O., D.S.O.     | *8. Lieut.-Colonel S. M. Rice.        |
|                                                      | *9. Major L. V. Bond.                 |
|                                                      | *10. R. E. Holland Esq., I.C.S.       |

### *\*Members of the Executive Committee; also*

Colonel H. Hendley.

Major D. G. Cowie.

Lieut.-Colonel E. F. Knox, D.S.O.

Captain H. G. W. Meikle.

Captain L. D. Woodcombe.

Captain A. I. Sleight.

SECRETARY & EDITOR **LT. LIEUT.-COLONEL C. C. R. MURPHY.**

SUPERINTENDENT .. **STAFF SERGT. A. J. MCCULLY.**

BANKERS .. **ALLIANCE BANK OF SIMLA, LTD.**

1. The United Service Institution of India is situated at Simla.
2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed on the opposite page.
3. The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published. War maps are on view in the Reading Room, with the positions of the troops, so far as is known, marked with flags, in each theatre of war.
4. There is a well-stocked library in the Institution, from which members can obtain books on loan, free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V. P. for the postage, or bearing by railway.
5. The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members; but ordinary members wishing to have their journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.
6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found on the opposite page.
7. MEMBERS ARE RESPONSIBLE THAT THEY KEEP THE SECRETARY CAREFULLY POSTED WITH REGARD TO CHANGES OF ADDRESS.
8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months.



# United Service Institution of India.

## RULES OF MEMBERSHIP.

**A**LL officers of the Royal Navy, Army, Colonial Forces, and of Volunteer Corps in India and Gazetted Government Officers shall be entitled to become members, without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 75 + entrance fee (Rs. 10) = Rs. 85.

Ordinary members of the Institution shall be admitted on payment of an entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 5, to be paid in advance. The period of subscription commences on 1st January.

All members of the Institution resident in Simla for not less than 90 days during the year, will be charged an additional subscription of Rs. 5 per annum from the 1st January 1917.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying the postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 8, in advance, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 8 per annum.

Serjeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 6.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

## Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para. 487, and King's Regulations, para. 453.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer, and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.







# THE STANDARD LIFE ASSURANCE COMPANY.

ESTABLISHED 1825 :—IN INDIA 1846.

INCORPORATED BY SPECIAL ACT OF PARLIAMENT 1910.

The oldest Established Life Office in the East.

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W. K. DODS, Hongkong & Shanghai Banking Corp'n.

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W. D. HENRY, C.I.E., Alliance Bank of Simla Ltd.

*Record.*

|                          |             |
|--------------------------|-------------|
| REVENUE ... ..           | £1,550,000  |
| BONUSES DECLARED ... ..  | £8,170,000  |
| ACCUMULATED FUNDS ... .. | £13,575,000 |
| CLAIMS PAID ... ..       | £33,340,000 |

*Chief Medical Officer :*

LIEUT.-COL. R. BIRD, C.I.E., M.V.O., V.H.S., I.M.S., Calcutta.

*Solicitors*

SANDERSON & COY.,  
CALCUTTA.

*Bankers*

The BANK OF BENGAL.

*Secretary*

W. E. HILL,  
CALCUTTA.



| EXPENDITURE                                                       | AMOUNT. |    |    | TOTAL. |    |    |
|-------------------------------------------------------------------|---------|----|----|--------|----|----|
|                                                                   | RS.     | A. | P. | RS.    | A. | P. |
| To Balance Dr. ...                                                |         |    |    |        |    |    |
| „ Secretary's allowance (In-1914)...                              |         |    |    | 3,250  | 0  | 0  |
| „ Office Establishments—                                          |         |    |    |        |    |    |
| „ Office Contingencies ...                                        | 210     | 0  | 0  |        |    |    |
| „ Stationery ...                                                  | 2,297   | 8  | 0  |        |    |    |
| „ Printing ...                                                    | 435     | 0  | 0  |        |    |    |
| „ Books and Binding ...                                           | 7,325   | 11 | 0  |        |    |    |
| „ Furniture ...                                                   | 284     | 0  | 0  |        |    |    |
| „ Journals { Printing ...                                         | 720     | 0  | 0  | 11,222 | 3  | 0  |
| „ Journals { Premiums ...                                         |         |    |    |        |    |    |
| „ Journals { Postage ...                                          |         |    |    | 58     | 3  | 0  |
| „ Postage { Recoveries ...                                        |         |    |    | 76     | 8  | 0  |
| „ Postage { Miscellaneous sub- ...                                |         |    |    |        |    |    |
| „ MacGregor Medals ...                                            |         |    |    | 1,150  | 0  | 0  |
| „ Tactical Schemes { ...                                          |         |    |    | 1,350  | 4  | 0  |
| „ Tactical Schemes { ...                                          |         |    |    | 620    | 8  | 0  |
| „ Refunds of Subscriptions ...                                    |         |    |    | 49     | 11 | 0  |
| „ Prize competitions (typing) ...                                 |         |    |    | 109    | 8  | 0  |
| „ Building (Painting) ...                                         |         |    |    | 89     | 12 | 0  |
| „ Army Lists ...                                                  |         |    |    | 561    | 0  | 0  |
| „ Electricity ...                                                 |         |    |    | 10     | 2  | 3  |
| „ Maps ...                                                        |         |    |    | 1,122  | 4  | 0  |
| „ Lectures ...                                                    |         |    |    | 60     | 6  | 11 |
| „ Insurance, Rent and telephone) ...                              |         |    |    | 35     | 15 | 0  |
| „ Exchange on cheques ...                                         |         |    |    | 34     | 13 | 4  |
| „ Miscellaneous (including unknown for wrappers for Journals) ... |         |    |    | 40     | 0  | 0  |
| „ Library Catalogues ...                                          |         |    |    | 10     | 0  | 0  |
| „ Cheque returned Hardy uncashed ...                              | 1,165   | 2  | 3  |        |    |    |
| „ Cash with Secretary ...                                         | 240     | 0  | 0  | 1,405  | 2  | 3  |
| Total ...                                                         |         |    |    | 21,256 | 4  | 9  |

SIMLA, C. C. R. MURPHY, LIEUT.-COLONEL,

1st March 1917

Secretary, U. S. I. of India.





December 1916.

| Item | ASSETS.                                 | AMOUNT. |    |    | TOTAL. |    |    |
|------|-----------------------------------------|---------|----|----|--------|----|----|
|      |                                         | RS.     | A. | P. | RS.    | A. | P. |
| 1    | of U. S. I. Building 1st January 1916.  | 24,703  | 0  | 0  |        |    |    |
| 2    | iation at 1½% ...                       | 373     | 0  | 0  | 24,330 | 0  | 0  |
| 3    | of Library Books 1st January 1916...    | 9,784   | 0  | 0  |        |    |    |
| 4    | ses and rebinding ...                   | 681     | 7  | 3  |        |    |    |
| 5    |                                         | 10,465  | 7  | 3  |        |    |    |
| 6    | iation on new books at 50% Rs. 340-7-3  |         |    |    |        |    |    |
|      | old books Rs. 10-0-0                    | 350     | 7  | 3  | 10,115 | 0  | 0  |
|      | st January 1916 ...                     | 2,730   | 0  | 0  |        |    |    |
|      | tious during 1916 ...                   | 162     | 0  | 0  |        |    |    |
|      | f maps (Tactical) ...                   | 2,892   | 0  | 0  |        |    |    |
|      |                                         | 200     | 0  | 0  | 2,692  | 0  | 0  |
|      | of Furniture and fittings 1st Jan. 1916 | 5,064   | 0  | 0  |        |    |    |
|      | 2 Heaters Rs. 40-0-0.                   |         |    |    |        |    |    |
|      | iation at 6% „ 304-0-0.                 | 344     | 0  | 0  | 4,720  | 0  | 0  |
|      | of Pictures & Sculpture 1st Jan. 1916   | 4,985   | 0  | 0  | 4,835  | 0  | 0  |
|      | iation at 3% ...                        | 150     | 0  | 0  | 1,697  | 12 | 0  |
|      | of Medals 1st January 1916 ...          | 1,679   | 12 | 0  | 1,297  | 0  | 0  |
|      | of Trophies 1st January 1916 ...        | 1,310   | 0  | 0  | 2,700  | 0  | 0  |
|      | iation at 1% ...                        | 13      | 0  | 0  |        |    |    |
|      | of 1912 Bombay P.T. Debentures at 90%   | 2,700   | 0  | 0  | 3,000  | 0  | 0  |
|      | Deposit with Alliance Bank 1-1-1916     | 3,000   | 0  | 0  |        |    |    |
|      | ith Secretary ...                       | 299     | 13 | 0  | 299    | 13 | 0  |
|      | diture towards January 1917 Journal.    | 696     | 9  | 5  |        |    |    |
|      | on Covers for Journal for 1917.         | 200     | 0  | 0  | 896    | 9  | 5  |
|      | s due by                                |         |    |    |        |    |    |
|      | ibers for year 1916 ...                 |         |    |    |        |    |    |
|      | „ previous to 1-1-1915 Rs. 2,884-0-0    | 1,630   | 0  | 0  |        |    |    |
|      | (contra)                                |         |    |    |        |    |    |
|      | „ for year 1915 „ 1,028-0-0             | 3,912   | 0  | 0  |        |    |    |
|      | scribers ...                            | 257     | 0  | 0  |        |    |    |
|      | ertisers ...                            | 117     | 0  | 0  |        |    |    |
|      | ibers killed during 1916 (contra) ...   | 153     | 0  | 0  | 6,069  | 0  | 0  |
|      | Total Rs. ...                           |         |    |    | 62,634 | 0  | 0  |

C. C. R. MURPHY, LIEUT.-COLONEL,

*r.*

*Secretary, U. S. I. of India.*



| Item. | RECEIPTS.                         | AMOUNT. |    |    | TOTAL. |    |    |
|-------|-----------------------------------|---------|----|----|--------|----|----|
|       |                                   | Rs.     | A. | P. | Rs.    | A. | P. |
| 1     | By Subscription Secretary ...     | 1,800   | 0  | 0  |        |    |    |
| 2     | " " Office ...                    | 3,500   | 0  | 0  | 5,300  | 0  | 0  |
| 3     | " " Agencies ...                  | 200     | 0  | 0  |        |    |    |
| 4     | " Advertisement ...               | 200     | 0  | 0  |        |    |    |
| 5     | " Casual Salting ...              | 400     | 0  | 0  |        |    |    |
| 6     | " Sale of Catage ...              | 250     | 0  | 0  | 1,050  | 0  | 0  |
| 7     | " Sale of Perf ...                |         |    |    |        |    |    |
| 8     | " Government ...                  | 150     | 0  | 0  |        |    |    |
| 9     | " Interest on phone ...           | 75      | 0  | 0  |        |    |    |
|       | Port Municipal taxes ...          | 250     | 0  | 0  |        |    |    |
| 10    | " Entrance Lic Light & Heat ...   | 150     | 0  | 0  |        |    |    |
|       | members Insurance ...             | 150     | 0  | 0  |        |    |    |
| 11    | " Entrance Dual Repairs ...       | 150     | 0  | 0  | 925    | 0  | 0  |
|       | bers)                             |         |    |    |        |    |    |
|       |                                   |         |    |    | 200    | 0  | 0  |
| 12    | " Subscription books and maps ... | 500     | 0  | 0  |        |    |    |
| 13    | " " g and Repairs ...             | 200     | 0  | 0  | 700    | 0  | 0  |
| 14    | " Arrears recog ...               | 6,000   | 0  | 0  |        |    |    |
| 15    | " Lectures ...                    | 1,000   | 0  | 0  |        |    |    |
| 16    | " Tactical See ...                | 900     | 0  | 0  | 7,900  | 0  | 0  |
| 17    | " Postage, re ...                 |         |    |    |        |    |    |
| 18    | " Miscellaneous ...               |         |    |    | 275    | 0  | 0  |
|       |                                   |         |    |    | 800    | 0  | 0  |
|       |                                   |         |    |    | 80     | 0  | 0  |
|       |                                   |         |    |    | 100    | 0  | 0  |
|       |                                   |         |    |    | 300    | 0  | 0  |
|       | 917 (not realised).               |         |    |    | 2,000  | 0  | 0  |
|       |                                   |         |    |    |        |    |    |
|       | Total Rs. ...                     |         |    |    | 19,630 | 0  | 0  |

SIMLA,

MURPHY, LIEUT.-COLONEL,

1st March 191

Secretary, U. S. I. of India.



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| DATE.         |    | RECEIPTS.                            | AMOUNT. |       | TOTAL. |       |
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|               |    |                                      | RS.     | A. P. | RS.    | A. P. |
| 191           |    |                                      |         |       |        |       |
| June          | 1  | By Balance brought forward ...       |         |       | 365    | 0 4   |
| Augu          |    | .. Cash in hand ...                  |         |       | 0      | 14 6  |
|               | 4  | .. Interest on G. P. Notes for       |         |       |        |       |
|               |    | Rs. 2,000 for $\frac{1}{2}$ year ... | 33      | 13 5  |        |       |
| Octob         | 26 | .. Interest on G. P. Notes for       |         |       |        |       |
|               |    | Rs. 4,300 for $\frac{1}{2}$ year ... | 70      | 6 0   |        |       |
| Octob         |    | .. Interest on G. P. Notes for       |         |       |        |       |
|               |    | Rs. 2,000 for $\frac{1}{2}$ year ... | 32      | 9 0   |        |       |
| Dec.          | 17 | .. Interest on G. P. Notes for       |         |       |        |       |
|               |    | Rs. 2,000 for $\frac{1}{2}$ year ... | 32      | 9 0   |        |       |
|               | 20 | .. Interest on G. P. Notes for       |         |       |        |       |
|               |    | Rs 4,300 for $\frac{1}{2}$ year ...  | 70      | 6 0   | 207    | 2 5   |
| Total Rs. ... |    |                                      |         |       | 573    | 1 3   |

DECEMBER 1916.

| ASSETS.                     |     | RS.   | A. P. |
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| ernment Pro. Notes (at 70%) | ... | 4,410 | 0 0   |
| Bank Balance Cr.            | ... | 434   | 3 9   |
| Total Rs.                   | ... | 4,844 | 3 9   |

C. C. R. MURPHY, LIEUT.-COLONEL,

Secretary, U. S. I. of India.



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**SUGGESTIONS FOR REMOVING THE DIFFICULTIES ENCOUNTERED BY BRITISH UNITS ARRIVING IN INDIA FROM THE POINT OF VIEW OF REGIMENTAL INTERIOR ECONOMY AND THE COMFORT OF THE MEN.**

BY

MAJOR F. B. JEFFERISS, F.R.C.S., (EDIN.) R.A.M.C., (T.F.)

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The influx of a large body of men of the Territorial Force into the Indian Empire, soon after the commencement of the Great European War, is a fact in history hitherto unprecedented.

The Territorial Force, composed as it is of men drawn from all ranks of society, although accustomed since their enlistment to periods of military discipline, are not regular soldiers and were until war broke out only brought into actual contact with ways military for interrupted and limited intervals of their service.

The Territorial soldier thus differs from the Regular.

He further differs from his regular brother in the following ways:—

1. The physical standard for the man joining a Territorial unit is lower than that required for the Regular Army, and even then the medical examination may not be as strict as it might be.



2. The amount of work done and military training received is of necessity much less.
3. Men of the Territorial Force are primarily civilians, living a civilian life in their own homes, tending to make the learning of military ways difficult and irksome.
4. The Territorial units, with few exceptions, arrived in India without Regular Adjutants, or other Regular officers or instructors, and had to learn by experience.
5. Many of the men were immature youths, much younger than the average soldier sent out to India for the first time, some were over age, as in the case of these men belonging to the National Reserve, who were at the outbreak of war drafted to Territorial units.

These facts I consider all tend to make the life of the Territorial soldier uncomfortable, at least for the first six months in India, and in the case of the older men for a longer time.

The newcomer found the work difficult, for it was all new to him; his officers were in many cases as inexperienced as himself and consequently all ranks suffered from lack of knowledge as to what was expected of them, and as to what they were entitled to, and how they could get the best out of their surroundings.

Time has of course changed this, and after six months in the country the Territorial, both officer and man, is at least not inferior to his more experienced Regular brother, in his knowledge as to how to look after number one.

The difficulties that may have arisen are not however all on one side, and the Government of India must have been sorely tried at times to meet the wishes and allay the grievances that have cropped up from time to time in this connection.

Very great credit is due to all concerned in the generous, and at all times helpful, manner in which the Government has treated



all ranks of the Territorial Force.

The suggestions made by Commanding Officers have always been sympathetically listened to, and things have been done that were never dreamed of, even to the amendment of existing regulations to meet the altered circumstances.

The object of this paper is to show if possible what are in the first place considered difficulties among the Territorials, as well as discomforts, and secondly how these may be mitigated or removed.

The phrase Regimental interior economy will be dealt with in its widest sense, and some of the points touched on would strictly speaking not come under this heading; they might however be included as difficulties encountered.

The voyage out is often a trying one for all concerned, and much might be done in the time available to teach the men as to the new conditions of life they may expect.

The voyage out in the case of the Battalion to which I am attached lasted five weeks, and although the usual routine and physical exercises kept us busy and fit, little could be done to teach the men about the altered conditions and life they were about to experience.

Lectures certainly were given and nearly all the officers and some of the non-commissioned officers took their share in this, but how can the pupil learn if the teacher is ignorant?

A limited amount of hand books "Our Indian Empire" were issued but hardly enough to supply all the officers even. This little work is excellent, but the private soldier never saw it.

The late Lord Kitchener's pamphlet on venereal disease is also excellent, and was circulated among the men, and has done much good I feel sure to lesson the evils of venereal disease.

It would have been well if none of the Territorial units had embarked without having attached to them an officer and one non-commissioned officer to each company, with Indian experience, whose whole duties during the voyage should be to give lectures, and advice to their less experienced comrades.



The medical officers were able to, and did lecture to the men on the care of their health, sanitation, and the effects of climate etc., but there is much to be learned that can only be taught by those that know India by experience.

Much might be done to make the train-journey more comfortable. More room should be allotted, to give the men sufficient accommodation and cubic space. Troop trains should have the preference over ordinary passenger traffic on the lines; why should they be side-tracked for hours to allow ordinary traffic to proceed?

The type of train might be much better; is it not as important that a healthy fit man should have as much comfort and care taken of him as is given to his sick or injured fellow travelling in a comfortable hospital train? In the one case the man is a useful unit, in the other he is at least for the time being no longer of use to the state. Electric fans should be regular fittings in all carriages in troop trains. If this were so troops could be moved at all times of the year, and at any time of the day.

If the trains were made more comfortable, and the journey expedited the dangers from the sun and heat would be greatly diminished, and the risk of disease infection removed, as men would not be tempted to eat fruit at the stations, and drink from unauthorised sources, etc. As a matter of fact the Battalion had only one sick man in the train, and the hard boards acting as bed and seat, were more a fund of amusement and light hearted grousing than anything else.

On his arrival at his allotted station the new comer is new to everything, his surroundings are strange, his barrack room is novel, his bed is hard, and the ways of the native are as yet a sealed book.

This is the time he makes mistakes and is liable to be taken advantage of by the wily Hindoo, and charged an anna for a drink of water !

Unlike the regular soldier who usually joins his hardened and experienced regiment as one of a draft, and learns from his



bettors, the Territorial has no teacher or adviser from whom he may learn to be wise.

A considerable amount was done by attaching Regular officers to Territorial units to help and instruct, and very valuable they proved, but more help and advice should be given to the men.

Here again lectures might be given by men with Indian experience, or non-commissioned officers could read those lectures compiled by competent men and preferably illustrated by lantern slides. Lantern slides and lecture could be circulated from unit to unit.

In this battalion this has been done by private enterprise and personal expense and much useful information imparted to the men in a more or less popular style of lecture. Such subjects as malaria and the mosquito, water supply and disease, enteric fever and inoculation, etc., will readily suggest themselves as being of interest and instructive value to the men.

**FOOD AND FEEDING ARRANGEMENTS.**—I was struck on reaching this country by the primitive feeding and cooking arrangements in barracks, and suggested more than once that regimental arrangements might be made for feeding on more "civilised" lines. The reply was that if men became accustomed to having their meals in this manner, they would not readily adopt themselves to feeding and cooking arrangements in the field.

I cannot agree with this for the following reason.

Before the war in times of peace the men were accustomed to a civilian life, when they eat their food off a table covered with a table cloth, and in many cases used a table napkin.

Every year those same men went in to camp for fourteen days' training and immediately fell into the ways and adapted themselves to the camp conditions of life and camp cookery, and in addition all the cooking was done by themselves, thus showing that they readily adapted themselves to the changed state of existence, eating off an enamel plate, with an inverted bucket for a table. In some camps we had a large marquee as a dining tent



with excellent results as to comfort and general efficiency.

In India much disease is conveyed in food that has become contaminated by dirt, dust, and flies, I have seen men sitting on the floor of their barrack room verandahs eating their food with the floor as a table, dust and flies everywhere, with natives serving the food and washing the dishes with a jharan that is anything but clean.

The handling of the food by the native is a constant source of anxiety however careful one is to see that all are free from disease both by frequent medical inspection, and protective inoculation, as well as the provision of clean clothes, and antiseptics to wash their hands with. This handling of food by the native is an ever present danger of infection, and a factor to be dealt with.

No regulation, or medical supervision can alter the insani-tary habits and customs of the native.

I am glad to say that my battalion enjoyed a remarkably low sick rate thanks to the cleanliness of the troops, and the personal supervision of their officers. Others I fear were not so fortunate.

Thanks to inoculation against the disease enteric fever is now an almost rare disease in the army, but there is no doubt that many cases of diarrhoea, sore throat, and other maladies are attributable to food infection, necessitating admission to hospital, with consequent expense to the state, and loss of efficiency and pay to the men.

The remedy is better feeding arrangements, and I would suggest the following, which although they may be idealic, and costly, would in the long run be more economical:—

1. One or more dining halls should form part of every barracks; these should be provided with forms, and tables, and be rendered fly proof and provided with a bar from which meals could be served.
2. A central cook house attached to the dining hall or halls, also fly proof, properly equipped.



3. The supervision by British orderlies should be extended, and should include the serving of food, which might be done by "Mess men" under company arrangements. When climatic conditions will allow of it all cooking should be done by the Battalion cooks and not by natives.
4. Each dining hall or cook house attached should have a fully equipped scullery for washing up with an efficient water supply laid on.
5. A pantry for storing crockery etc., in charge of the company "Mess man."

The above points could be easily carried out I think without in any way disturbing the company system of rationing and messing arrangements.

Each company could have its allotted space in the dining halls, scullery, and pantry under the direct responsibility of the company mess orderlies. I can see no reason why certain men should not be detailed as waiters to the others, in the same way as other orderly duties are allotted.

These arrangements would be, as before remarked, ideal, but when one compares the present messing arrangements with those of a Workhouse or other Local Government Board Institution at home, how different they appear. In these institutions the inmates eat their food off crockery, not enamel, even in some they are provided with table cloths, and their food is brought to them, they do not line up for it as it were at a soup kitchen.

The initial expense would of course be considerable but who can say it would not be a vast improvement on the present system.

The results of such an arrangement would be—

1. Comfort for the troops.
2. Better health among the men, resulting in better physique with more and better work done.
3. Less sickness, and consequent economy in hospital expenses.



4. Concentration of resources, which always tends to both economy and efficiency.

Before leaving the question of messing it was found of benefit to have "late dinner" in the hot weather in the plains, and it worked very well.

It was found that if the men partook of a heavy meal in the middle of the day the result was more for a desire to sleep than for work or sport. On the advent of the cold weather the usual hours for meals were resumed. In the hot weather the only meal served was soup, or tea and bread, and the men approved of the arrangement.

ABLUTION.—To present a clean and smart appearance is one of the aims and the pride of the British army.

The station I was in for the first year is one of the hottest in India; eighty per cent of us stayed there throughout the hot weather with the thermometer ranging about 110 degrees for months.

One of the greatest troubles was the scarcity of water, all the wells from which the supply was drawn being low.

What a luxury a swim would have been, what a pleasure a hot bath is after football or a bit of hard work.

Certainly the men could get a bath whenever they wished and the water supply admitted of it, but a hot bath was another matter, and obtained with difficulty by applying at the cook house for a bucket of hot water. Cleanliness is said to be next to godliness, but at times it is next to impossible.

There was a splendid swimming bath in the barracks, but its well of supply was dry.

Some authorities deprecate swimming baths for troops in hot climates contending that they are liable to cause chills. I think however with proper supervision this could be easily avoided. Swimming is not only a useful and necessary accomplishment to the soldier, but might with advantage be included in the programme of training.



The sport and enjoyment obtained from a swimming bath would undoubtedly add to the efficiency and comfort of the soldier in India.

With regard to washing, and the supply of hot water much can be done by company arrangements.

At the present time the men are under canvas in the hills and each company has a bath tent, curtained off into cubicles, and a man can get a hot bath whenever he likes on payment of one anna. In barracks it was not so and the resources of the cook house had to be drawn upon.

Could not every barracks be supplied with a bath house?

This building need not be an expensive one, but built much on the same lines as the present ablution rooms, divided up into compartments etc. and with hot water laid on. The hot water could be generated from a boiler attached, and with a little ingenuity this boiler could serve the purpose of supplying steam when required to a low pressure steam sterilizer for disinfecting infected clothing or bedding, etc.

Heat could be generated to a considerable extent by burning the dry rubbish, and other barrack refuse.

The boiler would thus serve the triple purpose of raising hot water for baths etc, as a disinfecter, and a rubbish destructor.

I have on several occasions thought what a necessity a disinfecter is in all stations. I would go further, I think every unit certainly, every brigade, should have a small portable disinfecter as part of its transport.

In connection with cleanliness I would mention the barber, the Regimental "Nappie," a room should be set apart as a hair cutting and shaving "Saloon" under the supervision of the P. B. I. and the Medical Officer, the usual antiseptic precautions should be carried out, and men should be encouraged to make use of their own razors, hair brushes, etc.

On no account should the "Nappie" be allowed in the barrack rooms going from man to man, using the same tools, and thus conveying the risk of infection from skin disease



etc from one to another.

This shaving "saloon" could be easily run as a toilet club among the men themselves, who pay so much a month as members.

Definite authority must be obtained for setting a room apart for this purpose, as I remember on one occasion a letter being received asking "on whose authority" an unused non-commissioned officer's quarter had been converted into a very satisfactory barber's shop, under the P. B. I.

In camp the arrangements for ablution are not always what they might be, the difficulty in some parts being the scarcity of wood to build ablution benches. Our Quartermaster devised a scheme to overcome this and at the same time it was a great saving in weight as regard transport of basins. A ridge of earth is raised about two feet high, and about eighteen inches wide at the top, along the top of this ridge are scooped shallow basin-like depressions. Each man, or possibly only one in every five men, is supplied with a piece of mackintosh sheeting or canvas (an old condemned tarpaulin serves the purpose) about eighteen inches square with which he lines his depression, thus he has an improvised basin.

The advantages of this scheme are:—

1. A raised washing bench.
2. Easy transport of the canvas or mackintosh, as compared with that of basins.
3. Economy.

The trench that is dug in the making of the washing ridge is used for emptying the waste water into, and should be connected with a soak pit. The whole of course should be filled in on evacuation of the camp.

It is not even necessary for each man to have a piece of the sheeting but each company could have so many allotted to it.

We tried waterproofed brown paper, but although it held water well it was not durable enough; and took longer



to dry.

The average man of all ranks is inclined to gauge his degree of comfort by the quality of his food, and one authority at least has stated that an army fights on its stomach, and this is to a great extent true.

The rations supplied to our Army in India are in every way excellent, and the standard of food value is good, with the exception that the amount of fat necessary for a perfect diet is low. This is especially so in the plains as the cattle used for meat are usually very lean, and little dripping is available. I often wished the men could have butter supplied as a ration, or if this is not possible then margarine. This substance is but little inferior to butter, constituting a good and cheap article of diet.

It is not however the ordinary rations I would remark on so much as the extra messing, and the food obtained by the men at the Coffee Shop.

With regard to this latter institution I am afraid that in many cases the men do not get value for their money here.

One advantage in the system of course is that the food supplied is good in quality, the management being under regimental supervision.

The prices however are no doubt in many instances above bazaar rates, the men are supposed to deal with the contractor, and they feel that they are being done.

The system of rebate has a great deal to do with this, the contractor has of course to make his profit, but in addition he has to make sufficient profit to pay the P. B. I. the rebate.

Surely this is a temptation on the part of the contractor to deal, shall I say, sharply with his customers.

The provision of regimental funds is of course a necessary and excellent device, and the up keep of the various institutions such as games, library, etc. is thereby maintained. The system is thus one of a co-operative nature, these funds being a percentage of the men's money. Where these funds permit they



should be spent solely on the men's comfort, and the money should be enough to provide them with hot baths, toilet saloon, and the cost of moves in the way of transport of any belongings the men may have above their authorised scale. The cost of moves in the ordinary way should in no way fall upon the funds under control of the P. B. I.

Many Battalions newly arrived in India have suffered from a bad contract between themselves and the Regimental Contractors.

The Government would do well to have a list of suitable and satisfactory contractors, and only entertain contracts submitted by those whose names are on the roll. A black list might even be kept of those firms who from some reason or another have proved themselves undesirable, to which could be added from time to time such as may have fallen from the paths of virtue.

Further the form of contract should be an authorised one, a sealed pattern as it were drawn up at headquarters, under legal advice.

All contracts entered into would then be of a similar type, and every contingency likely to arise could be met and provided for.

Would it be an impossibility for units to manage their own coffee shops? If a contractor is able to make enough profit to pay himself and also a rebate of eight annas a month, could not the regiment make the whole profit for the benefit of its own funds?

Some company officers found that they could supply more and better food with their messing allowance if purchased direct from other than the regimental contractor. Surely this speaks for itself.

With regard to Regimental Institutes one of the best is undoubtedly the Royal Army Temperance Association and to see the crowded condition of its rooms is a sure sign of its popularity. Could this Institution however not be run on



Temperance instead of Total Abstinence lines?

We all know how drunkenness has decreased in the Army, but is any man the worse for having a pint of beer in the day?

The strict teetotal pledge enforced by the Royal Army Temperance Association however debars many a good man from enjoying its privileges and advantages.

The spirit of good living, moral rectitude, and sobriety could be attained by a modified form of pledge.

Many of the newly arrived soldiers in India found the hot weather in the plains a very trying ordeal. Time hangs heavy on the hands, the heat being too great to do much work out of doors, and the whole system, mental and physical becomes degenerate.

Much could be done to encourage indoor work and play.

The Battalion to which I belong arranged to have an "Arts and Crafts" exhibition at the end of the hot weather, and prizes were offered for various exhibits. This was keenly taken up and the hot afternoons were occupied in wool-work, knitting, drawing, carpentry, map-making, landscape targets, and numerous useful and interesting subjects. Thus the time was profitably and interestingly spent, which otherwise might have been devoted to unnecessary sleep, or other less innocent laziness. More might be done in this way the difficulty being the ever present lack of funds. As a matter of fact, thanks to the interest taken in the scheme by all ranks, the exhibition was such a success that a handsome profit was made from the gate money and side shows, enabling a fund to be started to provide the materials for a future effort on similar lines.

It has already been remarked that an army fights on its stomach, and to-day this is as true as ever.

No one can deny that an army marches, and fights too as a rule, on its feet. Much has been written and more has been done with regard to the care of the soldiers' feet, yet I think that more attention might yet be given to individual cases, especially in the fitting of boots. Also a more liberal



free issue of dubbin should be allowed.

Men should be able to obtain for the asking at the Quartermaster's Stores a small "ration" of alum, permanganate of potash, boric powder or other suitable and authorised remedy, or prophylactic, for the treatment of sore or tender feet, and thus carry out at all times in practice what medical and company officers are always preaching in theory. Every man should have a *free issue* of canvas shoes, and carry them with him on the march, as a change of foot gear when he arrives at his destination. The battalion chiropodist should have definite orders to inspect all feet, in addition to the medical officer, and report to the company officers.

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# **THE IMPROVEMENT IN STRENGTH AND EFFICIENCY OF THE VOLUNTEER FORCE IN INDIA.**

*(Gold Medal Prize Essay Competition—1916.)*

BY

S. G. V. FITZGERALD ESQ., I. C. S.

A couple of batteries of guns, a "battery" of machine guns, a few despatch riders, telegraphists and perhaps some others in the ranks, and a large number of untrained and half-trained officers:—Such was the contribution to the fighting forces of the Empire during the first eighteen months of universal war by an army of nearly forty thousand nominally "efficient" officers and men(1). To this in fairness should be added mention of the corps which were embodied for home defence at the four defended ports(2) and the indefinite support to the cause of internal order furnished by the increased keenness of unembodied volunteers all over the country. But in spite of the keenness of many of its members and a vast amount of unrecognised work on their part, our Indian Volunteer Force is never likely under existing conditions to be of direct value. An uneasy conscience has recently prompted Government to increase the grants to Volunteers; this is a welcome sign; but increased grants are simply good money thrown after bad unless a root-and-branch revision of the whole system be undertaken.

**1. Internal Discipline.**—The strength of a chain is the strength of its weakest link: the strength of a battalion is that of its weakest platoon which in its turn depends upon its awkward squad. This is doubly true of Volunteering in India, where drills are necessarily few and attendance uncertain; the slacker is not merely a weakness in himself, he is a grave hindrance to the efficiency of others. We must have something approaching

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(1.) Statistical, Abstract of British India 1914-1915, No. 49, page No. 219.

(2.) Some of these have since been disembodied.



a system of real military discipline, of which the first essential is that there should be a real power to punish for non-attendance and inefficiency.

It will probably be replied that such a power already exists under sections 18 and 19 of the Indian Volunteers Act XX of 1869: but these sections are rendered nugatory by (i) the clumsy formalities requisite under sections 9 to 12 and (ii) the unrestricted right of resignation which under section 13 every Volunteer possesses. The procedure of a court martial is unfamiliar to most Volunteers, and the Commanding Officer who alone can convene even a regimental court martial may easily be three hundred miles away and utterly ignorant of the case which may have occurred in an outlying detachment. For major offences the local Government has to be invoked and the proceedings are still more ponderous and unwieldy. Even if at last the offender is convicted and fined, the corps reaps no benefit: while his almost certain resignation (whether convicted or not) means the loss of a possible efficient and the grant which he may earn then and thereafter. It is little wonder that the present penal clauses are a dead letter.

Exactly the same difficulty existed in Great Britain prior to 1907. It was very successfully met in the Territorial Forces Act, (3) and should be similarly dealt with in India.

- (a) Enlistment must be for a definite term of years, with power to re-enlist also for a fixed term.
- (b) Resignation during this term of years, if allowed at all, must be placed beyond the reach of mere pique by a substantial penalty leviable into the funds of the corps: which however the Commanding Officers should have power to remit.
- (c) Sections 18 and 19 of the present Act should be made a reality, and a stimulus given to their enforcement by a proviso that fines levied under them or for

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(3.) 7, Edward VII Chapter 9, Section 9. See also *passim* the Australian New Zealand and South African Acts cited below.



failure to become efficient which should also be made an offence, shall go into the coffers of the corps to which the offender belongs. It may become necessary to distinguish between " Compulsory " and " optional " drills and parades, but all parades when an instructor is visiting an outlying station must of course be compulsory.

- (d) All Volunteer offences, except on actual military service, must be summarily triable by a Presidency Magistrate or Magistrate of the 1st class being a Justice of the Peace and may be prosecuted (in the absence of the Commanding Officer from the station where the offence was committed) by order of the officer in immediate command of the Volunteers in that station.
- (e) Each corps or at any rate the first line thereof must be embodied for the annual camp of exercise exactly as it would be for actual military service (Section 27 present Act), the Local Government being given the requisite power. Among other advantages, this will secure a revision by an impartial authority of excuses for non-attendance.

All these items and others which will occur in the course of this essay require legislation. Their necessity cannot be too strongly emphasized; it is useless to attempt to build except upon the rock of firm internal discipline. But as in Great Britain when the Territorial Force was substituted for the Volunteers, so in India the first result of such provisions as these would be a large falling off in numbers. This we might regard with equanimity, for we should be able to get far better value for money out of those that remained. It would be worth while to spend even double the present cost of the Indian Volunteers upon a force of half the size, provided that force were really efficient, and not, as now, a sham.



**II. External Compulsion.**—Universal service is not necessary to the efficiency of the Volunteers; nor would it make any great increase in their numbers for almost everybody affected is already a Volunteer. But if a higher standard is to be exacted and the duties involved to become a reality, then compulsion may be necessary to retain the force at its present level. In any case universal service would be fairer than the present system which compels some men to be Volunteers all their lives while permitting an occasional slacker to escape altogether. For compulsion on a large scale is already practised in India. Railway and other companies refuse to retain non-volunteers in their employment: Government departments look with great disfavour on clerks and on higher officials who shirk their duty in this respect. The opinion almost unanimous throughout India of those whom it would affect has recently been voiced from Rangoon and Calcutta, and demands that the law itself and not merely subordinate authority should compel every able bodied British subject of European birth or extraction to be trained in military discipline. Even opinion at home in England no longer objects to compulsion.

It would be waste of time in such an essay as this to repeat the well known arguments on general, mercantile, or hygienic grounds in favour of a scientific system of universal service. In spite of gloomy prognostications to the contrary, the details of administration will prove no greater obstacle in India than in the numerous countries which have already adopted universal service.

Two real objections however arise; the first is that firms such as those few which now refuse to permit Volunteering among their employees might tend to abandon the employment of citizen soldiers in favour of Indians and Aliens. But the European employer usually has his early mornings and late evenings to himself, and it is on these and on a week's holiday which he would probably get in any case, that compulsion falls. This is to the profit rather than the loss of his employer.



Foreign competition therefore is not likely to be more dangerous in India than it has been in other countries which have accepted compulsion. As for Indian competition, the sole justification for the Englishmen's(4) presence in India at all is that he is indispensable. As the Indian becomes more and more fitted for superior posts, he will occupy them: and compulsory military service can neither retard nor accelerate this process. The Anglo-Indian and the domiciled Englishman do indeed enter into direct competition with other Indians: but discipline and physical efficiency are more likely to help than to handicap them in that competition.

The other objection is that though a mild form of compulsion can be introduced without legislation, yet any thorough handling of the matter can only be effected by that means and would be sure to raise in the Imperial Legislative Council the well known demand for Indians to be admitted to the Volunteers. That demand in its turn might arouse certain bitter feelings which are best left to slumber. The writer believes however that this difficulty must be faced in any case; and the question of compulsion is not likely to make it any greater than it would otherwise be.

There is one method however, of penalising both refusal to volunteer, and resignation on insufficient grounds, without resorting to legislation. A simple notification in the Gazette of India is all that is required to cancel Article 13, of Schedule 1 to the Rules under the Indian Arms Act: the permanent forces and a small number of officials would still retain the right to carry arms: but all others of European birth or extraction would be left to merit that right by volunteering or convince the arms-licensing authority of the soundness of their reasons for not doing so. Why should such a privilege be separated from the duties which it entails? Those who are too old or infirm or in positions too responsible for active volunteering can still remain

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(4.) I use this term throughout the essay for all English, Irish, Scotch and Welsh, in preference to the detestable periphrasis "Europeans."



in the reserve, the duties of which are too light seriously to inconvenience anybody.

Coming next to legislative sanctions and disabilities, it might be possible to make the privileges of an European British Subject under the Criminal Procedure Code dependent upon his discharging or having discharged the duties of an European British Subject. There are few, fortunately, who ever need to exercise those privileges; but the number of those to whom they are of sentimental value is extremely large. This however is perhaps too revolutionary a suggestion and might further endanger the passage of the bill through Council. Short of this, the alternative method of compulsion is to impose, as in the Colonies, (5) very heavy penalties both on possible Volunteers who shirk their duties, and on Employers and others who prevent or dissuade them from fulfilling them. In Australia either of these offences is punishable with a fine of one hundred pounds; and in South Africa the penalties against a recalcitrant employer include even the possibility of a year's imprisonment with hard labour! It is not however suggested that such extreme severity as this would be required in India. For the Cadet portion of the Defence Force Government has the further power implied in its control over and financial support to the Schools.

**III. Details of Administration and training.**—In Australia and New Zealand compulsion begins in the cadet stage with boys of the age of twelve; it is not clear whether compulsion exists in regard to cadet corps in South Africa; but in all three dominions Cadet Service is rightly regarded as a preparation and not as a substitute for the duty of service in the citizen force. It is however a very valuable preparation, both for its moral and physical (6) effect on the cadet, and because it is possible

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(5.) Commonwealth Act No. 20 of 1903 as amended to date, Sections 134, 135.  
 New Zealand Act No. 28 of 1909 „ „ „ „ Part VII.  
 Union of South Africa Act No. 13 of 1912 Section 109.

(6.) And of course mental; a healthy body is the first requisite to a clear head.



to exact a much larger number of drills and parades from school boys than from men with civil business to perform(7).

As cadets will not be required as such to fight exemptions on the grounds of conscientious objection should not be allowed. Wherever possible cadet officers should be drawn partly from the ranks of the cadets and partly from the masters of the school concerned.

Coming to the question of adult compulsion, (and the outlines of an adult voluntary service would not be very dissimilar) the only plan at present in the field is that of the Burma Chamber of Commerce; a plan which has the great virtue of not asking too much. It will form a convenient basis for discussion, for it contains several points which must be common to all such plans: the writer ventures to indicate with due respect where it is lacking and where different proposals or fuller details are in the opinion necessary.

*"Every British Subject from Europe or the Colonies between the ages of 17 and 30 on his arrival in India, shall be liable for the following duties unless absolved by the Authorities."*

To this must be added also *"And every British Subject of European descent domiciled in India."* Exemptions might be granted to priests and ministers of religion, conscientious objectors and the physically unfit; and such exemption may be complete or only from the active force, or from combatant duties. It goes without saying that members of His Majesty's Forces would also be exempt (8).

*"Foreigners are not to be allowed to serve, except with special permission but it may be necessary to impose a special tax in lieu of service, so that they should not be allowed to escape scott free."*

It would be preferable to call this payment *"A composition in lieu of service"* and to have it paid straight into the funds

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(7.) The division into senior and junior cadets in force in Australia and New Zealand is scarcely necessary in India.

(8.) *e. g.* I. M. S. Officers on civil duty.



## **The Volunteer Force in India.**

of the local corps : so as to make clear that the demand does not infringe the rule of nations by which a civilised state lays no burden on foreigners greater than its own citizens have to bear.

*"A. Five years in the active citizen force. Whilst in the active citizen force every man should be required to perform not less than 25 drills of 1½ hours per annum and should in addition attend not less than six days in camp, or five whole working days at manoeuvres, and fire a musketry course of not less than 150 rounds."*

The standard is somewhat higher than that of the present "extra efficiency" for rifle volunteers, but could be attained with the utmost ease by almost all of those who attain that classification. All lower qualifications such as the present absurd "efficiency" are very properly discountenanced. The lengthening of the duration of drills is excellent for it is just as easy to put in 1½ hours drill as one hour (9). The camp of exercise is also essential. But the musketry course proposed is three times the length of that at present in force, and is really longer than is required among a community so many of whom have other opportunities of becoming expert with the rifle. The Volunteer Musketry Course should be identical with that of the Regulars.

Power to excuse attendance at the camp of exercise should lie (as above suggested, page 5) with Commissioners and Officers appointed by the Local Government for the purpose.

*"Recruit drills should not be taken into consideration for the purpose of efficiency and the time of each individual's service should only count from the date he passes out of the ranks of recruits."*

Article 65 of Army Regulation India, Volume IX, must be amended. Some smartness in the handling of arms by every individual is essential to the efficiency of the whole. This can

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(9.) Except of course in one or two exercises such as bayonet fighting or single stick.



best be acquired in the recruit stage. This and other details of the scheme require a considerable addition to the number of instructors which is considered below.

*"B. Three years in the first class reserve.*

*C. Three years in the second class reserve.*

*D. Three years in the third class reserve.*

*"In the 1st reserve every man must put in not less than twelve drills per annum and fire the full musketry course."*

*"The drills to be performed in one month."*

*"In the 2nd reserve a musketry course of 100 rounds to be fired every year."*

*"In D. no actual training."*

The authors of this scheme appear to contemplate the possibility of the reserve being called up at least for garrison duties in India even if not for still more active service, for that is the only obligation imposed on their "3rd reserve" which does not lie on all citizens of all ages. Even if this were possible there would be no need to differentiate the training of the different classes of reserve: but it must be recognised that a very large percentage of Englishmen and Anglo-Indians in the East occupy positions of some responsibility, and, no matter how great the need, not more than a very limited number of the Citizen Force can be spared from their civil vocations for any length of time. The only real use of the reserve is against internal commotion: since for other purposes the active force represents the utmost limit of men that can be spared.

It would therefore be preferable that after the first five years, the citizen soldier should have the option of remaining in the active force for further successive periods of five years or being transferred for the next ten years to the reserve, the duties of which as at present should be confined to service in the immediate neighbourhood of his civil vocation. The training of the reservist to include attendance at all compulsory drills held in that neighbourhood for the active force ; (1) the complete course of musketry if there is a range available at hand ; but no



liability to leave his place of civil employ either for camp of exercise, musketry, or any other purpose ; though of course he should have the right if convenient to him to complete any year's training up to the active standard. For those who have fulfilled the statutory obligations above proposed and have reasonable grounds for not continuing in the active force, voluntary Rifle Associations should be established as in the three dominions already mentioned. These would take the place of the present reserve, and would swell the number of service rifles to be kept available for any emergency.

The nature of the annual training is not considered by the Burma Chamber of Commerce. Nor is it possible within the limits of such an essay as this to do more than suggest a few points which do not at present receive the consideration they deserve.

Bayonet fighting in particular is an exercise in which every volunteer should be proficient, and each corps must be liberally stocked with doublets, vizors and spring bayonets for the purpose. Similarly in light horse and mounted infantry, sword practice, single-stick, and where armed with the lance, tent pegging, should be *sine qua non*. Again, after this war ends there will be hundreds of machine guns which though too worn for active service will still be good enough with a few repairs for beginners to learn on. The value of these to Volunteers cannot be overstated, and as many men as possible both mounted and unmounted should be instructed in the use of them. In mounted corps with compulsory attendance at camp and compulsory drills before camp, it will be possible to accustom horses to their neighbours in the line.

From the annual camp which all corps should hold, gymkhanas excepting purely military events, regimental concerts and dances, should be rigorously excluded. It might even in some cases be possible to make the camp of exercise coincide with and form part of Brigade manoeuvres. Of course it is of the utmost importance to get the annual drills over before the camp of



exercise, which should therefore as now be at the close of the cold weather.

The Volunteer Long Service Medal is at present given for twenty years "efficient" service, a recent order having allowed every year's extra-efficiency to count as one and a quarter years for this purpose. It still requires sixteen years extra efficiency as against twelve years for the similar medal in the Territorial Force at home. There can be no greater mistake than to make such a decoration too cheap : but the amount of work to be done and the length of time to be taken are not necessarily synonymous. It is probably advisable to make the conditions equivalent to those in the Territorial Force. By all means let the medal be earned in sixteen or even twelve years : but each year must be one in which the full training including camp of exercise and musketry, has been performed (10), and no lesser qualification should count at all.

*"The difficulty of arranging for those in districts where it is not possible to put in a period of training without dislocating ordinary work might be got over by a Corps of Scouts or Guides who could map the country and be available for military service in their own districts if required; but this must necessarily be left to Local Governments to organise."*

This is the really weak spot of the Burma Chamber's scheme. Good maps of the country prepared by the Trigonometrical Survey already exist : amateur map makers have not the necessary knowledge to add anything of military value thereto : and the time wasted would be greater than that of drills and camps of exercise. The real difficulty of small communities and isolated Englishmen in the Mufassil is not to spare time for volunteer duties but to collect enough persons to perform them.

In the Dominions already mentioned where universal defence service is in force, exemptions are granted on the score of residence in sparsely populated tracts : and similar exemptions at least from the active force would have to be allowed in India

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(10) Either by a 1st line man or a reservist.



### ***The Volunteer Force in India.***

to those otherwise compellable who can not be allowed to quit their isolated civil duties. But those who can do so will gladly collect for occasional week ends and a yearly camp in the society of their fellows : and there are scores of small stations where a weekly drill in the cold weather or the rains, provided it were made interesting, would be attended by from five to twenty men. Bayonet and sword fighting are proposed above and require no more for an interesting practice than three men to take turns as combatants and umpire : tent-pegging can almost always be improvised where there is, say, a police parade ground and a retired sowar to teach it. Further help may be got from the police in such directions as small local field days, and the training of occasional recruits in stations which have no resident U. L. Instructor. In addition, the local defence scheme may be practised and its deficiencies discovered and remedied.

The present staff of Instructors however would be insufficient and any large increase in their numbers expensive as well as unjustifiable on the basis of the work to be done. Some efficient and influential volunteer in each small station should be made responsible for holding the drills and given a power commensurate with his responsibility of enforcing attendance. He should have at least the rank of sergeant, supernumerary if need be, so long as he exercised this authority. Of course here as in every detail of amateur soldiering the personal equation is all important : but the keen men suitable for such posts exist and would speedily be found.

No remuneration is needed and indeed the best men would resent the idea of payment for light duties of this nature, but there might perhaps be a small allowance to meet out-of-pocket expenses such as railway fare and refreshments given to poorer volunteers on expeditions at a distance from headquarters.

*"Officers and Non-Commissioned Officers would be obtained from men who voluntarily undertake to continue for more than five years in the active force."*

*"Officers should be appointed on probation and only con-*



*firmed it efficient.'*"

*"A three months course with a regular unit should as far as possible be insisted on at one period of an officer's career."*

The first two of these suggestions are obviously desirable. Further, officers and N. C. O's must undertake a distinct responsibility not merely to perform the annual efficiency test but to be forward and zealous in promoting the efficiency of the corps by holding drills in their neighbourhood and bringing the rank and file up to the highest attainable standard. At present an officer may continue performing no more than the yearly minimum of drills for efficiency: and as long as he does not sink below this, it is impossible to get rid of him, and he may even in time attain the Volunteer Decoration. Worse still, Article 19 of Army Regulation India Volume IX, provides an absolutely needless loophole by which an officer may do nothing for five years before he is compelled to part with his commission. The only honest course for an officer who finds himself "unavoidably prevented" from performing his duties is to *offer* his resignation. The Volunteer Decoration should never be granted except on a responsible certificate of keenness and efficiency such as is required in the case of the Territorial Decoration at home from the Officer Commanding Corps and Brigade Commander.

It is extremely doubtful whether attendance with a regular unit could be made compulsory except perhaps as a preliminary to captaincy, but all courses at home or in India should be thrown open to Volunteer Officers and steps should be taken to encourage attendance. For example the Chelsea and Hythe courses for territorial officers are a very pleasant holiday from civil pursuits.

*"The command of a regiment would be given only to a thoroughly competent officer, and such a command would be made as far as possible the greatest civil honour obtainable, and the 'hall mark' of good citizenship."*

The "Rangoon Gazette" in criticising this proposal of the



Burma Chamber suggested that "Assistant Commandant" should be the highest rank attainable by a Volunteer officer, and that the Commandant should be selected for a term of years from the regular army. The office of Commandant is one which is looked forward to with keenness by Volunteer officers, and it would hand, be neither easy nor fair to deprive them of it. On the other neither the Brigade Commander nor the Inspector of Volunteers have time to devote detailed attention to individual volunteer corps, which unless they receive such attention are apt to fall from efficiency. In England territorial officers rise to the command of their units(11), but the General Officers Commanding Territorial Brigades and Divisions are usually drawn from the regular army. In India a complete separate organisation for Volunteers is impossible, but the Inspector of Volunteers should be given half a dozen assistants, each with the temporary rank and salary of a Colonel on the Staff. It would be the duty of these Inspectors of Volunteers to advise and assist the Commandants in their charge: to bring together different units wherever possible: to devote especial care to the Officers Training Corps (12): and to attend annually as many as possible of the various camps of exercise in their charge *remaining at each for four or five days at least* and reporting in detail to the Inspector General Volunteers, the Brigade Commander and Officer Commanding Corps. It might perhaps be possible to employ these officers on other duties during the slack season.

**IV. Use in time of War.**—The service of a Volunteer Corps at present is confined to the Civil District or Districts or the Railway line, in which it was raised. But the chances in any one district or railway against internal disturbance of so serious a character as to employ the Volunteers are extremely remote. A twofold disadvantage results: the individual Volunteer knowing that he will probably never have any fighting to do is tempted to become slack and to regard the whole performance as unreal:

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(11.) In exceptional cases higher.

(12.) See below.



the Government knowing that it is never likely to be able to employ the Volunteers to advantage (13), is tempted to neglect the force as one which will never repay the money and time expended upon it. This war has at least shown that Volunteering may be made useful as a training for other things: but we should go further and make the Volunteers directly useful in themselves as a fighting force. This restriction of employment must cease except as regards the reserve, and the active force must be liable for service in any part of India. The necessity for some Volunteers being retained at their civil vocations must be met not by binding down the whole force but by giving Commissioners of Divisions and other officers the power at present possessed by Exemption Tribunals at home of excusing from active service those who are indispensable in their civil employment (14). Further as in England and New Zealand those who can do so should be encouraged to accept an Imperial obligation of service outside and beyond British India. The raising of an Anglo-Indian Regiment (15) is already a step in the right direction; the dry bones of Volunteering in peace time must be quickened by the hope of becoming fighting men.

**V. The Officers Training Corps.**—Educated Englishmen suitable for military officers are in the East usually employed in positions of trust and responsibility which prevent their pledging themselves to military service in advance of the need. Accordingly in peace time the Indian Army Reserve of Officers list contains only about a score of names: many hundreds of officers have been admitted to it during the present conflict; and yet after nearly two years of war when the demand for officers is still insatiate, many hundreds of suitable and keen young men are held back by the absolute impossibility of sparing them from their

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(13.) See the Secretary of State's supplementary reply to Colonel Yate in the House of Commons April 11th 1916.

(14.) This is the Proviso to Section 27 the present Act (XX of 1869,) but it is not used as it should be.

(15.) This was written soon after the project was announced.



### ***The Volunteer Force in India.***

civil vocations. Moreover, those whom it has been possible to spare have not by any means always been those most suitable to, or versed in military matters ; it is impossible to say in time of peace who can and who can not be spared for military employ in time of war: and the Indian Army Reserve which can be called out by the Commander in Chief without reference to the civil obligations of its members can therefore never be a sufficient training ground for the large numbers who are required in a great war.

Nor do the Volunteer Corps in their present form provide such a training ground. Of the officer class in the volunteers those who do not actually hold commissions are almost entirely in the mounted arm—the very arm for which there has been least demand—and have few opportunities for acquaintance with any other branch of the service. Again the only test of their progress is the proficiency examination, an examination confined solely to their qualifications as officers of the Volunteer Force and of the arm to which they belong—that is to say in practice officers of the unembodied peace-time volunteer force. Comparison is invited with:—

1. The Rules of the Inns of Court Officers Training Corps.
2. Report on the Examination for Certificates "A" and "B": Officers Training Corps, March 1914 (the last issue before the war.)

The standard exacted for these certificates is not very high. In point of fact it has been found undesirably low. But can anybody seriously contend that the standard laid down for the Proficiency Examination (Army Regulations India Volume IX, Section 80) is as high even as the lower of these two certificates? And in practice the standard attained is apt to fall grievously short even of that laid down.

It is therefore proposed:—

- I. That an Officers Training Corps (Senior Division), subsidiary in the first place to the Indian Army Reserve of



Officers be formed.

II. That the Governor General in Council be empowered to declare any existing Volunteer Corps or portion of a corps to be or to contain a contingent of the Officers Training Corps of India.

III. Neither membership nor any certificate in this Officers Training Corps should impose any obligation to accept a commission or to go on active service. The India Army Reserve of Officers is open to those whose circumstances permit them to take such an obligation.

IV. That the examinations for Certificates A and B should be simultaneous and identical for all India, and should attain at least as high a standard as the corresponding certificates at home.

V. The examinations would be conducted twice a year simultaneously in certain large military stations all over India, the papers being sent in a sealed packet to the local Staff Office. A regular officer should invigilate and maintain discipline in the examination room.

VI. Except perhaps in the case of the Artillery (16) an elementary paper in the duties of a British officer with Indian Troops and the etiquette which he must observe would be compulsory at any rate in certificate A. Cases have, it is rumoured, occurred of newly appointed I. A. R. Officers causing serious offence by ignorance of the customs of the fighting races. In view of the diversity of languages in India it might perhaps also be advisable to insist on the higher standard or some equivalent test in Hindustani as a preliminary to certificate B.

VII. It might be advisable to have all the written part of the examinations except on purely Indian subjects set and examined from home by the staff of the Director of Military Training in England as was done in Canada by the Laval

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(16.) Even here also if it is thought necessary to train officers for the mountain batteries and ammunition columns.



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Officer Training Command. In these case, no papers would be sent home, except those of the candidates who had satisfied the examiners in India in the oral and practical part of the examination and in the purely Indian written work.

VIII. In the immediate future a large number of Englishmen may be expected to come out to India in possession of either one or both of these certificates or of actual experience in the field. The corresponding Indian certificate should be issued to them on passing in the Indian paper only.

IX. The courses at home and in India, open to officers, should also be open to members of such Officers Training Corps in the same manner that they are open to Officers Training Corps at home.

X. The non-combatant branches of the Officers Training Corps might safely be opened to natives of India. For instance there must be many Indian doctors granted temporary commissions in the Indian Medical Service and Indian Subordinate Medical Department who would have been the better of a little preliminary training.

XI. As the majority of Volunteers suitable for commissions are normally in the mounted branch while the greatest demand is for infantry officers, the taking of an infantry certificate should ordinarily be required before a man is permitted to compete for the cavalry. No time limit should be imposed, and men should be given facilities for training with other arms than that to which they primarily belong.

In conclusion, legislation should be undertaken at once while the patriotism of all India is stirred by the war; the structure of defence which we all desire must be raised before the common impulse is cooled.



## **THE SIEGE AND CAPTURE OF SERINGAPATAM.**

BY

LT.-COL. C. C. R. MURPHY, 30th PUNJABIS.

Seringapatam is a name well-known, at least to all military men, a name bringing to the memory a vision of a breach in lofty walls and a spirited dash across a rocky river bed: yet, being away from the route taken by most travellers, it fails to attract as many visitors as it well might. To the student of the history of the British Empire in India, as well as to him who loves to peruse the gallant deeds of brave men, it must always be an object of interest, and both alike will be amply repaid by a visit to the site of Tippoo Sultan's power.

Situated on an island about  $2\frac{1}{2}$  miles in length by  $1\frac{1}{4}$  in breadth formed by the waters of the Cauvery, the fort, an irregular quadrilateral, with a superficial area of about two thousand square yards, occupies the western end, its northern and western faces being covered by the river. At the eastern extremity of the island is a pleasure garden, called the Lal Bagh, and before the war broke out the whole space between this spot and the fort was filled with houses. The greater part of these were destroyed by Tippoo to make room for his batteries and to form a glacis; and more must have been cleared away after the capture of the place, for at present there remains but a short street or two, with a gradually diminishing population. A little due east of the fort with its northern side washed by the left branch of the river, is the Daulat Bagh, the summer palace of the Sultan, still possessing its former glories of gilt and colour.

The first siege, which took place in 1792, has paled in  
1792 Campaign. significance before the attack and capture of  
the fort in 1799. Tippoo had in turn attacked the Nizam, the Mahrattas, and the Coorgs, but when he directed his arms against the Rajah of Travancore, a protected ally of the English, matters came to a crisis. Lord Cornwallis



the then Commander-in-Chief, retaliated by the capture, on the 7th March 1791, of Bangalore, whose fort surrendered on the 21st of the same month. In February 1792, the position known as French Rocks was seized, and the high ground on the near bank of the Cauvery occupied by the British Army. On the 6th of that month the passage of the river was effected, and the troops gained possession of the Lal Bagh and the village of Ganjam, which lies near the centre of the island. On the 23rd with his fortress almost entirely invested, Tippoo decided to accept the terms offered him; he agreed to pay three crores and thirty lakhs of rupees and to cede about a half of his territories.

With a heart eaten by chagrin and a mind bent on future resistance he appears to have set himself almost immediately to the work of strengthening his stronghold. New lines of entrenchments were made within six hundred yards of the walls and a second rampart and ditch were constructed on all faces at a short distance within the outer walls, a fact which was unknown to our troops till they actually stormed the place.

The second rupture was brought about in a curious way, 1799 Campaign. namely through the instrumentality of a French adventurer, one Ripaud, who, while in command of a French privateer, was driven ashore by stress of weather near Mangalore. This man found his way to Seringapatam and succeeded in persuading Tippoo that he was an envoy from the French Republic. It came to the notice of the Governor-General at Calcutta, about the middle of 1798, that Tippoo was intriguing with the French, and he was called upon to give security for his peaceable behaviour, but his reply being unsatisfactory, troops were at once put in motion against him. After several engagements with the Mysorean forces, including the battle of Malavelly on 27th March 1799, where between 7,000 and 8,000 Mysoreans were killed, the British Army arrived on the 3rd April within 4 miles of Seringa-



patam. At 3 a. m. next day the 12th Foot with the flank companies of the 74th and Scots Brigade charged and bayoneted a large force of Mysorean cavalry before they could mount their horses. During the night of April 5th the 12th Foot, supported by 1,000 Sepoys, was ordered to advance and capture a nala  $1\frac{1}{2}$  miles in front of the camp, and at 4 a. m. the following morning, when daylight dawned, our troops found themselves within 300 yards of the nala which was defended by some 20,000 Mysoreans and French, with large masses of infantry on both flanks. A shower of rockets and repeated volleys of musketry met the 12th Foot. The enemy then ventured to advance, but were immediately charged, whereupon the Mysoreans, confounded by the suddenness of the attack and the still bayonets of the British, abandoned their post in panic. This charge of the 12th drew forth from General Harris, commanding the army, the exclamation "Well done old 12th; why they are going to take Seringapatam!"

This post thus captured was designated "Shaw's Post" in honour of the charge of the 12th Regiment which was commanded by Lieutenant-Colonel Shaw, that officer having succeeded to the command on the death of Lord Hervey Aston the previous year. They lost 11 officers and 180 men killed and wounded in this attack. The rockets above mentioned had 20 to 30 feet of bamboo attached to them and caused dreadful wounds. To aid in the attack just described Colonel Wellesley (afterwards Duke of Wellington) was sent the same night with the 33rd Regiment and a battalion of Bengal Infantry to occupy a wood on the right bank of the river near Sultanpetta, but the ground had not been reconnoitred and this force was repulsed with great slaughter. Lieutenant Fitzgerald was killed, and twelve grenadiers captured, all of whom were tortured to death.

Following on this came nearly a month's continued fighting and hardships, the army gradually closing on Fort Seringapatam, and General Harris, after consulting with his engineers, determined to attack the fortress at its north-western salient. The



fortress had indeed been considerably strengthened, and moreover by someone belonging to the French school of fortification; but this salient was still its weakest point. The curtain, nearly five hundred toises in length, was armed with only three pieces of cannon; the river, besides, for five months of the year, was fordable here and there throughout its whole length. The plan being settled, the operations began at once. General Harris with the main body was to attack the place at the angle made by the junction of the northern with the western face, whilst the Bombay division was to take up a position in continuation of the line formed by Lord Harris, which should bring it opposite the northern side of the angle with a view to bringing an enfilading fire on the defences, and thus diminishing the opposition to the main attack.

On the 20th April, the fire opened from the northern attack. This was followed up by the successful dislodgment of the enemy from a position four hundred yards in advance of his other field works, a success which enabled the besiegers to establish, in the course of the night, a parallel at a distance of 780 yards from the fortress, and 440 from the enemy's entrenchments still remaining outside it

Alarmed at this and at indications of the erection of another battery on the northern bank, Tippoo, on the 22nd, directed a vigorous sally to be made against our positions on the bank. This sally was well planned, and the troops who conducted it, led by Tippoo's corps of Frenchmen, behaved with great spirit, penetrating the English entrenchments; but it was finally repulsed with the loss of about 700 men.

On the 23rd the fire from both attacks silenced the enemy's guns, the enfilading fire from the northern bank rendering it impossible for the Mysoreans to defend the curtains.

On the 25th, the approaches meanwhile having steadily advanced, the English led by Colonel Wellesley, dislodged the enemy from their last remaining entrenchment. This was 380 yards in front of the Fort on its western face, covered on



its right by a redoubt, and on the left by a small circular work open to the rear. The entrenchment was indeed carried, but as the enemy with great gallantry still held the circular work which enfiladed it, it was extremely difficult for the English to maintain their position. It became necessary then to drive the enemy from their circular work, and from some ruins near it. This was accomplished on the 27th, under a heavy fire from the walls of the Fort.

The Sultan, now driven to depend on the defence offered by the Fortress itself, again expressed a willingness to treat. But the conditions offered were such that he felt he could not accept them without degradation, so he resolved to resist to the bitter end.

Meanwhile day by day the parallels approached nearer, until on the 3rd May, the breach on the western side of the angle was reported practicable. The previous night the river had been forded by Lieutenant Lalor. He had ascertained that the descent into the ditch from the retaining wall of the counterscarp was only seven feet; that the ditch was fordable; that the rubbish of the rampart and fausse-braye formed an irregular but continuous slope from the ditch to the summit of the rampart; and that it would only be necessary to provide means, to accompany the assault, for the descent from the counterscarp into the ditch. It was determined then, the breach having been reported practicable on the 3rd, to assault on the morning of the 4th.

*The Assault.*—Early on the morning on that day, Major General Baird, who himself had been nearly four years a prisoner in Serlingapatam, issued his orders for the assault. The following formed the assaulting columns: —

*Left Column.*—(Attacking from the North),

Commander, Lieutenant-Colonel Dunlop.

12th Regiment.

33rd Regiment.

6 Companies of European Flaukers, from the Bombay



***The Siege & Capture of Seringapatam.***

Army.

10 Companies of Bengal Sepoy Flankers.

50 Artillerymen.

*Right Column.*—(Attacking from the West),

Commander, Colonel Sherbrooke (His Majesty's 33rd  
Regiment)

73rd Regiment.

74th Regiment.

8 Companies Coast Sepoy Flankers.

6 Companies Bombay Sepoy Flankers.

50 Artillerymen.

*Reserve.*—Commander, Colonel Wellesley.

The Regiment de Meuron,

4 Battalions Madras Sepoys.

The two columns were ordered to assault if possible at the same time (1 p. m.) and on coming to the top of the breach to wheel to right and left.

If the breach was found to be too narrow, the left column was to move out first. It will be noted that Wellesley was in command of the reserves during the actual assault.

*Tippoos Sultan's Army.*—6,000 regular Horse.

7,000 irregular Horse.

30,000 regular Infantry.

4,000 Guards etc.

15,000 Pikemen.

8,000 Carnatic peons.

6,000 Pioneers.

10 French Officers.

90 French Privates.

450 Kaffirs.

800 Looties.

It was not till 1 o'clock in the afternoon that General Baird taking out his watch, exclaimed; "The time has expired!" and leaped on the parapet of the trenches, shouting in a loud voice "Now my brave fellows, follow me!" In a moment the storming



columns sprang up, dashed into the river, and crossed it under a heavy fire of musketry. Many were drowned in crossing the river. In six minutes the head of the assaulting columns had gained the summit of the breach and planted the British standard on the rampart. But the breach had scarcely been gained when the British found themselves confronted by an inner rampart lined with enemy, separated from them by a wide and deep ditch full of water, and defended at its angle by a high caponier. Here it was that General Baird on reaching the ramparts was heard to exclaim "Good God! I did not expect this!" Our losses here would have been much greater had not Captain Woodhall of the 12th Regiment with the light company impetuously crossed this ditch in a manner which will be explained later and forced his way into the inner rampart, thus taking in reverse those who, with Tippoo Sultan, were defending the traverses of the outer ramparts. The remainder of the storming columns, determined to penetrate by some means or other into the interior, ran along the ramparts, some to the left and some to the right. We will leave them thus running and follow the fortunes of Tippoo Sultan on this eventful day.

Tippoo during the siege had more than once shown to his followers that he despaired of the result. Instead of striving to inspire them with courage he, with a bigotry which had become habitual to him, had had constant recourse to astrologers and priests. On the day of the assault it was pointed out to him by his ablest General Saiyid Ghafur, that an attack was imminent, and that the British might storm the place at any moment. Not only did he refuse to believe it, but he permitted one of his youthful flatterers to summon the men from their posts in the traverses and on the ramparts to receive their pay at mid-day. They were in the act of receiving it when the assault was delivered. It is said that Saiyid Ghafur was hurrying to the Sultan to remonstrate against this act of folly, when turning aside for a moment to issue orders for the removal of a plank which had



been left between the outer and inner rampart, he was killed. Tippoo was about to sit down to his mid-day meal, when this intelligence reached him. Though greatly agitated, he still continued his meal, and was engaged at it, when he was informed that the assault was actually being made. He hastened at once along the northern rampart towards the breach in the direction of the left or northern attack, on nearing which he himself fired seven or eight shots at the stormers, killing two or three. Finding however, that his people were falling about him, and that the stormers were advancing, he ran back along the rampart until, from the outside, he reached the sally-port whence the way was open to him to join his cavalry on the other side of the river. But he disdained to flee. Believing that the inner Fort was still secure, and that from its ramparts he might yet be able to drive back the foe, he mounted his horse and endeavoured to force his way through the sally-port, and thence into the interior fortifications. But before he could reach the gateway it had become choked with fugitives fleeing from the men of the Light Company of the 12th Regiment who had managed to penetrate the inner Fort in the manner presently related.

The Sultan, however, who had already been once slightly wounded in the right side, still endeavoured to press his way but was stopped in the dark arch of the gateway by a sudden fire from the Light Company of the 12th, already within the heart of the place; and another bullet struck him near the first. Pierced by wounds his horse here sank under him, and his turban fell off, and almost immediately afterwards he received a third wound, severe, though not fatal. His attendants then placed him in a palanquin. But as it was impossible in the crowd and tumult to move so clumsy a conveyance, Tippoo would appear to have left it and crawled towards a gateway at a little distance leading into a garden where there were some three hundred killed and wounded, rendering the passage impassable. Covered with blood and dying now, the fallen Sultan was raised by a faithful few and placed in his palanquin, where he lay faint and exhausted, till some



of the 12th climbing over the dead and dying, reached him; one of his attendants then proposed that he should save his life by disclosing his rank, but this Tippoo Sultan refused to do. A servant who survived the carnage and whose statement has been handed down from one officer to another to the present day, related that one of the British soldiers siezed Tippoo's sword-belt, which was exceedingly rich, and attempted to drag it off; and that Tippoo, who still grasped his sword, made a last cut with it, wounding in the knee the soldier, who thereupon shot him through the temple and killed him on the spot. His body remained undiscovered for several hours. The 12th Regiment claim, and the claim has never been disputed, that it was one of their men who killed Tippoo. In any case it must have been one of those who were first into the inner work.

To account for the manner in which the Light Company of the 12th under Captain Woodhall, had succeeded in entering the inner Fort it is necessary to retrace our steps. It would appear that in endeavouring to find a means by which they could penetrate into the inner fortifications, they had discovered a plank, which by some oversight had been left between the outer and inner rampart. Saiyid Ghafur was about to remove it when he was killed, and so the plank remained. Narrow, of some length, and having a great depth below it, the crossing of it was so hazardous that the following day in cold blood it is said that not a single man would venture to attempt it. But in the excitement of that memorable 4th May, there was no hesitation. In single file the men rushed across it, and it was these men who, by penetrating into the inner work, were able to meet from the inside, the fugitives who, with Tippoo amongst them, were endeavouring to enter the place which they deemed their last refuge.

From that moment the fighting was over. The carnage, though considerable, was much less than might have been expected in the taking of a town by storm. The French contingent surrendered at discretion. The two elder sons present of Tippoo,



ignorant of their father's death, showed a manly resignation to their fate. The houses of the chief Sirdars as well as those of the merchants and bankers were generally pillaged. But the palace was secured, and the wealth it contained was reserved as booty for the army at large. On the 6th of May, Wellesley, who was now appointed Governor of Seringapatam, wrote to General Harris:—

“I shall be pleased if you will order an extra dram and biscuit for the 12th, 33rd, and 73rd Regiments who got nothing to eat yesterday and were wet last night”.

The breach at the north-west corner of the Fort appears to have since been more or less built up; for it is not very easily distinguishable, and even now much care is necessary to scramble up or down the outer wall. Two cannon buried muzzle downwards show the point across the Cauvery from which the assaulting column broke cover. Only at the north-west corner is there any trace of the inner wall, which came as such a surprise to General Baird and his assaulting columns. The Cauvery where it branches in two, thus forming the island on which the Fort is built, is some five hundred yards wide, with a boulder-strewn bed and only two or three feet of water in it in the dry season. The northern face of the Fort runs along the right bank of the northern branch of the river for a distance of perhaps a thousand yards. In this place are the dungeons, the water-gate, and sally-port near which Tippoo was killed. Near the north-east corner of the fort are now to be seen more dungeons, which have only lately been discovered. Here too is Wellesley's bridge across the Cauvery, leading to a village on the left bank: the bridge was not built by Colonel Wellesley, but named after him in 1804. Here the visitor's bullock-bandy will come in useful and save him a walk of a mile to the Daulat Bagh, or Tippoo's summer palace. This was repaired some few years ago and now seems more reminiscent of an Earl's Court exhibition than of Tippoo Sultan. The paintings on the walls are worthy of note, and the house in design is typically eastern.



Driving from the Daulat Bagh towards the Lal Bagh at the eastern end of the Island, we pass on our right the obelisk erected to the Officers of His Majesty's 12th and 74th Regiments. It stands by itself on a rising Maidan commanding a view as far as Mysore. The monument appears to be made of rather soft stone, and to prevent the inscription from becoming completely obliterated, the tablets have been washed over with lamp-black, and the letters picked out in white.

A white and yellow colourwash has been daubed on the walls and pillars by some modern vandal. Perhaps it is not too much to hope that after the present Great War steps may be taken properly to restore this monument.

In the Lal Bagh is the Mausoleum of Hyder Ali, Tippoo, and his wife. There is also a European cemetery containing many tombs with undecipherable inscriptions, two being to men in the 12th regiment, but the majority to men in the 33rd regiment. Tippoo's tomb is in charge of a descendant of his family: it is a handsome dome-shaped structure, with black marble pillars. Visitors are allowed to enter; the air is heavy with incense; the three tombs are covered with a red cloth with bundles of peacock feathers lying on the top. There is abundance of water in the garden, and the visitor is generally presented with a rose reminding him of Omar Khayyam:—

*I sometimes think that never blows so red*

*The rose as where some buried Caesar bled.*

By the time the visit to the Lal Bagh is finished, the sun is nearly setting and we drive back through Ganjam village to the station.

In the story of the siege of Seringapatam there are four remarkable facts. First of these comes the incident of the wooden plank which the enemy had carelessly left across the inner ditch, a circumstance which practically delivered the fort into the hands of the storming-party. Then the attack, instead of taking place in the cool of the early morning, was made at 1 p. m., that is to say during the very hottest part



### ***The Siege & Capture of Seringapatam.***

of the day. This clever ruse resulted in the enemy being taken completely by surprise. Naturally they never imagined that the Feringhees would venture out in the noonday sun, especially during the hot weather. To commemorate this fact the sun, in full splendour, is depicted on the medal struck in honour of the siege. This medal, which was given in gold to generals, in silver-gilt to field officers, and in silver to captains and subalterns, shows the Indian Tiger being trampled on by the British Lion, and bears the somewhat ironical inscription *Asad Ullah-il-Ghalib*, the conquering lion of God, which was the motto of Tippoo Sultan. The next curious feature of the siege is that the storming party was led by a man who had himself been a prisoner with Tippoo for four years in the dungeons of Seringapatam. The story goes that when this man's mother heard that her son, David Baird, was a prisoner with Tippoo Sultan, and that the prisoners were chained together in pairs, she sighed and said "The Lord have mercy of the man that is chained to our Davie!" Then lastly there was the gallantry of the Lieutenant Lalor of His Majesty's 73rd Regiment who, the night before the attack, forded the river alone in the darkness and walked right up to the very breach in the fort walls. The information he brought back was of course invaluable. The next day he was killed in the attack; but wherever the English language is spoken, wherever the English flag is flown, the name of the gallant young Lalor will be associated with all that is noble and glorious.

Quite unconnected with the siege, yet full of pathetic interest, is a small house situated on the island and known as Colonel Scott's bungalow. For some years after Seringapatam was taken there was a garrison left on the island, but the place was found to be very unhealthy, and finally all the troops were withdrawn. Amongst the officers of the garrison was one Colonel Scott, who lived with his wife and children in a pretty, secluded bungalow quite close to the riverbank. One day two of his children died of cholera; and the next day when he came back he found that



his wife and the other children had died also. Borne down by the greatest grief the wretched man left his house without saying a word to his servants as to where he was going. His servants waited for him in vain. Days, weeks, months, passed by, but he never returned ; nor was he ever heard of again. In course of time this story reached the ears of the Maharajah of Mysore who was so moved to pity by it that he sent a chowkidar to look after the bungalow, and gave orders that nothing was ever to be taken away from it.

As the years went by, the curtains gradually fell from the walls ; the piano crumbled away into dust ; the carpets rotted on the floors ; until at last there was hardly anything left but the bare house. That too will disappear some day, for it is only the unsubstantial that endures, but the legend of Colonel Scott's bungalow will live till the seige itself be forgotten.

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# **THE IMPROVEMENT IN STRENGTH AND EFFICIENCY OF THE VOLUNTEER FORCE IN INDIA.**

*Gold Medal Prize Essay Competition—1916.*

BY

COL. H. A. YOUNG, C. I. E.

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*" And no one shall work for money, and no one shall work for fame,  
But each for the joy of the working..." (Kipling).*

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The wording of the subject for the essay this year implies—  
*First*, that the strength of the Volunteer Force in India can be increased.

*Second*, that the efficiency of the Volunteer Force in India can be improved.

*Third*, that compulsory service need not be considered.

This essay, therefore, will discuss the present strength of the volunteers in India, and whether it can be increased, also the existing state of efficiency of the force and how it can be improved. The question of compulsion will only be lightly touched upon. I must confess, however, to some doubts whether the time has yet come for the proper consideration of the subject of this essay. All military questions are in a state of flux and it is hardly possible to forecast either the political or the military conditions in India after the war. I am dividing my remarks into two parts, the first of which will deal mainly with facts and deductions therefrom, while the second will contain a discussion of possibilities with such suggestions as I have to offer.

## **PART I.**

According to the Imperial Gazetteer of India, Volunteers  
**History.** existed in the early days of British occupation as militia at the chief settlements, it states further that they were allowed to die out in the first years



of the nineteenth century; but several corps were enrolled during the Mutiny. Of the corps raised during the Mutiny the Madras Volunteer Guards alone survives. From "Vestiges of Old Madras" it appears that, in 1687, the Governor and Council of Fort St. George ordered 'a list to be taken of all the Company's servants and all English freemen and that they be formed into a Company of Trained bands'. The following entry in the records is interesting.—

"1st January, 1689-90. According to the Governor and Council's order, the City Train bands, containing all the Christian Inhabitants, also the Garrison Soldiers, met at the Generall place of Raudevouz, which were divided into two Partyes, and the methods of the millatary exercise shewn them round the Garrison. Afterwards march't over the river to the Campaigne, where they did form and order them in a Battalion; and then treated them with a handsome dinner." Not very different to a field day in modern times!

The statement below shows the enrolled and the efficient strengths for certain years, compiled from the Army Lists for those years.—

Numbers.

1892-3—Enrolled, 27,650. Efficient, 25,146 or 90·9 per cent.

1894-5       ,,   29,388.       ,,   25,944   ,, 88·2       ,,

1901-2       ,,   32,254.       ,,   30,772   ,, 95·4       ,,

1905-6       ,,   33,812.       ,,   31,937   ,, 94·4       ,,

1910-1       ,,   41,081.       ,,   39,011   ,, 94·9       ,,

1912-3       ,,   43,568.       ,,   41,612   ,, 95·5       ,,

1914-5       ,,   50,219.       ,,   48,497   ,, 96·5       ,,

The Budget Estimate for 1915-16 provides for approximately, 51,000 men.

The distribution in 1914-15 was,—

|                                                 | <i>Enrolled.</i> | <i>Efficients.</i> | <i>Per cent.</i> |
|-------------------------------------------------|------------------|--------------------|------------------|
| Mounted units                                   | ... 6,347        | 6,061              | 95·5             |
| Artillery, naval & engineers                    | ... 3,006        | 2,905              | 96·6             |
| Infantry, railway units                         | ... 16,920       | 16,709             | 98·7             |
| Infantry, other units, (includes cyclists etc.) | ... 23,946       | 22,822             | 95·3             |



## ***The Volunteer Force in India.***

The cost to Army funds of the Volunteer Force in India is approximately 30 lakhs, (Budget for 1914-15); but this sum only defrays the pay of the permanent staff, the capitation grants and the allowances for camps and field days. It is impossible under the existing budget system to ascertain the real cost to the State of the maintenance of the Volunteer Force, any more than it is possible to find out the cost of any unit in the regular army. For example, the cost of equipment, including ammunition, either initial or annual, cannot be ascertained from the budget. Government, also, occasionally makes grants for special purposes, such as a grant of one and a half lakhs in 1902-3 for rifle ranges. It must be remembered that a considerable part of the expenses connected with the maintenance of the force is defrayed by private generosity.

The Imperial Gazetteer states the object for which the Volunteer force is maintained and also gives the excuse for its scanty equipment, it says—  
**Objects.** “The role of the volunteers being the defence of ports, railways, cantonments and civil stations their equipment is limited accordingly.” The Act which authorizes and regulates the force clearly shows that the volunteers are for local service in the civil districts in which they are enrolled. It is evident therefore that it was not the intention that volunteers should ever form up in line of battle with regular troops. On the contrary, the help which they would afford to the regular army was to take the form of relieving it in part of the work of maintaining internal security and of assisting in the defence of the principal ports. Briefly, the object of the Volunteer Force in India is purely local defence in the narrowest sense of the word ‘local’.

Before it is possible to judge the efficiency of the volunteers at the present time, it is necessary to decide on a standard. If we go by the government standard we must conclude that a force which has 96·5 per cent of its enrolled strength passed as efficient, must be in a highly satisfactory state. If we may judge by inspection speeches, we



cannot fail to be amazed at the extraordinary military efficiency attained by the great majority of corps. Let us, however, consider the standard set by the authorities and try to realize what it means. The infantry recruit to become a trained volunteer must attend 16 elementary and 4 corps drills and must pass the recruits' course of musketry. The trained volunteer to be classed as efficient must attend 7 elementary and 2 corps drills in the year, and must pass as a second class shot. Now a drill consists of one hour's actual instruction and up to three may be taken in one day. The recruit has to fire 60 rounds at ranges varying from 100 to 500 yards, the trained volunteer fires 50 rounds as a minimum. Thus the trained volunteer, to maintain his efficiency, has to drill three days in a year (3 drills a day) and to obtain 90 points out of about 200 when firing 50 rounds at ranges not exceeding 500 yards. A standard of efficiency which calls, annually, for nine hours drill and the firing of fifty shots with an accuracy of less than fifty per cent, cannot be called high, especially when we remember that only twenty hours drill and the firing of sixty shots with an accuracy of half enables a man to call himself a trained volunteer. If then the Force is to be judged by the official standard of efficiency, we can safely say that there is plenty of room for improvement. There is no doubt, however, that the actual standard is higher than the official standard would lead one to expect. Whatever suggestions I may make for improvement, it must be understood that I do not imply any depreciation of the devoted efforts of so many zealous volunteer officers and men to fit themselves to serve their country.

Speaking generally, the force is provided with the barest minimum of equipment. A rifle, not always  
**Equipment.** of the most modern pattern, and a few accoutrements are provided by Government. Clothing and practically everything else has to be supplied by the corps, from the capitation grant or from private subscriptions. The only machine guns with the force are those which have been provided by private generosity. There are no entrenching tools nor



## ***The Volunteer Force in India.***

telephone equipment, while transport is practically unknown or is represented by the 'sahib's bearer'. To put the case quite plainly, the Volunteer Force in India appears to be well equipped for a church parade.

Though the force has never been called out as a whole, it has done useful work in many places in times of local troubles. In many of the large cities the volunteers have been called out to assist in the preservation of law and order ; but the duty was for a very short period and the circumstances were favourable. Little strain was thrown on their military knowledge while supply and transport presented no difficulties. Small bodies have joined their regular comrades in military expeditions, 48 pioneers from the Calcutta Volunteers took part in the Manipur campaign of 1891; 15 Rangoon Volunteers formed part of a Mounted Infantry Company which was present at the taking of Mandalay in 1885. In 1900, 250 Volunteers forming 'Lumsden's Horse' went to South Africa, these men were drawn from the whole force in India. On the whole we may say that the life of the Indian volunteer up to the beginning of the present war, was a quiet one and nothing occurred to suggest to him that he might be a unit in the armed forces of the Empire, nor did the authorities awake to any understanding of the possibilities latent in a force of forty or fifty thousand volunteers.

The use which has been made of the volunteers during the present war has not been entirely made public. We do know, however, that some use has been made of the technical corps belonging to the defended ports, and that in many stations guards have been furnished for short periods in order to relieve the regulars, temporarily. We know also that the force has provided a field gun battery and a machine gun battery for service in East Africa and some gun detachments for Mesopotamia. A number of commissions in the Indian Army Reserve of Officers has been given to members of volunteer corps, while many men have joined the home armies.



No doubt the volunteers have done all they have been asked to do ; but have they done all that is possible ? The British Empire is passing through a crisis, the seriousness of which it is impossible to over-estimate, and she requires the utmost assistance from each and all of her sons. Has she received the utmost assistance from the British in India? There are about 50,000 trained volunteers out of about 70,000 Europeans and Anglo-Indians capable of bearing arms. What number of regulars have those 70,000 civilians set free to fight our enemies? I doubt whether the existence of the volunteers has had much influence when the question of sparing regular troops has been discussed. The fact is the force is not organized, equipped or trained to relieve any considerable portion of the European garrison, nor to furnish any appreciable reinforcement to the active army. It is impossible to avoid the conclusion that the authorities do not regard the volunteers as forming part of the Empire's armed forces ; but rather as armed police, to be called upon only when local crime exceeds the power of the ordinary police to repress. While it may not have been possible to call out the force as a whole, it is certain that every corps would have agreed gladly to furnish daily for garrison duty a considerable percentage of their enrolled strength, in order to set free a corresponding number of regulars. After nearly two years of world-wide war our volunteers are but little if any better trained or fitted for really serious work.

Suggestions for the enlargement of the force or for the improvement of its efficiency have not been infrequent in the history of volunteering in India. In the Journal of this Institution appears the prize essay for 1883 by Major E. H. H. Collen on "The Volunteer Force of India, its Present and Future", in which the subject of the present essay is discussed. Major Collen urged that it was better to increase the numbers rather than the efficiency, he was against partial compulsion ; but advocated joining all scattered companies into administrative battalions, the enlist-



ment of the active co-operation and interest of all high officials, the state education of all European and Eurasian children with military drill, appointment of an Inspector-General and various other minor proposals.

In 1834, Mr. J. H. Rivett-Carnac, Lieut.-Colonel Commanding the Ghazipur Volunteer Rifle Battalion, made certain proposals for 'increasing the force of armed Europeans and Eurasians in India'. Briefly, his main suggestion was the institution of a reserve. He realized fully the force of the usual objections to joining the active volunteers, climate, heavy work, little leisure, the uninteresting nature of drills especially in the infantry ; but expected to overcome these by the formation of this reserve. The reserve was to attract the better-class men, intelligent men who might be induced to do a little target practice and learn a bit about the service rifle, and who could be trusted to pick up drill rapidly in case of a real call on their services. Arms and ammunition were to be provided and the men encouraged to use them ; but drill and uniform were not to be insisted on. For small numbers of men in the districts, he advocated an organization on Boer lines. He stated that in 1883 there were only 12,421 volunteers out of about 72,000 men capable of bearing arms (he includes Indians Christians), and he anticipated that 40,000 would join the reserve. Government approved of the reserve in 1885 ; but only 1,700 men had joined by 1906. In 1914-15 there were apparently about 4,050, in 1915-16 about 4,550. So the scheme, sound though it may have been in theory, has failed to draw the men required.

In 1892 a Committee of volunteer officers was assembled at Calcutta to consider various questions connected with the force ; but beyond a brief reference in 'The Army Book for the British Empire', nothing regarding their deliberations can be traced in the sources of information at my disposal.

Many suggestions have been made and many have been adopted ; but little real change has been made, or is likely to be made, so long as the old ideas of the objects and value of the



force are held by those in authority.

## **PART II.**

From the Census report for 1911 it appears that there were increase in strength. then in India,—

113,615 Europeans and allied races, males, British subjects, of from 15 to 50 years of age.

26,994 Anglo-Indians, males, 15 to 50 years of age.

(The total number of Christian males, 15 to 45 years of age, was 961,436).

Of the Europeans, it was estimated that about 76,000 were in the army, thus leaving about 64,600 males available for volunteers, including cadets.

Allowing for increase at the rate for the previous ten years, we can estimate the number of Europeans, excluding the army, to be about 41,500 in 1915-16 and the Anglo-Indians at 29,000. The figures for Anglo-Indians must be regarded with suspicion; but on the other hand there are a number of regulars included in the strength of the volunteers. Thus we shall not be far out if we take 70,500 as the number of men in India suitable for enrollment as volunteers.

In 1911 we had 41,000 volunteers out of a probable 64,600 availables, a percentage of nearly 63·5. In 1916 we have 51,000 out of 70,500 or about 72 per cent.

Comparative figures for Calcutta and Bombay are interesting; but the numbers given for volunteers do not include railway units, while the population figures include regulars. The figures are for 1914-15, and allow for increase since last census—

|                                          |     |        |
|------------------------------------------|-----|--------|
| Calcutta, males, 15 to 50, approximately | ... | 10,700 |
| Volunteers                               | ... | 5,689  |
| Bombay, males, 15 to 50, approximately   | ... | 7,500  |
| Volunteers                               | ... | 1,490  |

There appears room for increase at Bombay in any case.

It seems obvious that the war has had a very considerable effect on volunteering, and we may conclude that all men whose



feelings of duty are sufficiently strong or to whom the inducements and the conditions of service are attractive have been enrolled. We must anticipate a decrease rather than an increase when the war is over.

There are three ways by which the strength of the volunteer force can be increased—

- I. By the exercise of some form of pressure.
- II. By the offer of more material inducements.
- III. By improvements in organization and duties.

I. Without introducing compulsory service for all Europeans and Anglo-Indians, there are ways of exercising pressure in order to induce men to join the volunteers. So long ago as 1677, the East India Company wrote to the Council at Fort St. George,—“We take notice of the answers given by those not in our service to the orders for their repairing to and residing at the Fort, and we require that the said order be effectually complied withall, for it will be a great strengthening to our Fort to have so many Interested Persons there in time of danger, and they will be the better governed. And wee apprehend it would be convenient that these be listed as a Companie of Trained Bands to serve in time of danger, and Officers appointed them, and sometimes exercised in the use of their Armes, and some of our Council or senior Merchants to be the Officers, that on any occasion they may knowe whome they are to serve under without pay, as our trained Bands here.” (*Vestiges of Old Madras*). There was a considerable amount of compulsion, evidently, about volunteering (without pay) in 1677.

We know that one of the conditions of service in most Indian railways is enrollment in the volunteers and little difficulty is experienced in making these compulsory volunteers efficient. As a matter of fact, the percentage of efficient in railway corps is higher, and usually has been higher, than in any other branch of the force. It is quite open to Government to insist on all its servants joining; but it has always hesitated to take



such a step. The Committee of 1892 reported against any compulsion; but as usual suggested the favourite remedy—'active interest and co-operation of all heads of departments', etc. Pressure could be exercised on all firms and individuals doing work for Government; but such pressure would be very partial and would certainly be unpopular. It would be possible to follow the principle,—serve or pay, *i. e.* impose a special tax on all suitable men who would not join the volunteers. The difficulties in the way of such a course would be very great, however, as such a tax could hardly be a graduated one, yet a fixed one would be still more impossible, moreover the tax would be a further burden on a class which already bears rather more than its fair share of taxation. Short of general compulsion, therefore, I am afraid there is no form of pressure likely to have any satisfactory result, though we can admire the spirit of the Directors of the East India Company, when they wrote to their Governor at Madras in 1688.—"Though our war be over, you must continue to train and exercise in Arms all our Factors, Writers and English Servants of all Degrees, from the highest to the lowest, according to our former orders, because we must for ever after keep ourselves a Martiall Nation in India." (*Vestiges of Old Madras*).

II. The question of material inducements is one of very long standing. In 1685 a troop of Volunteer  
**Inducements.** cavalry was formed from among 'the rich men in Fort St. George' who were 'to keep each of them a Horse and Arms at their own charge.' This troop soon died out and when it was resuscitated in 1702, an allowance was authorized to each man for the upkeep of his equipment. Pure voluntary service for the public good is not common now, except in times of great emergency as at present, we prefer to give our money (more or less unwillingly) rather than our time. It is not surprising that there is a demand from time to time for some concession to volunteers. Many have been the suggestions, among them being—exemption from jury service,



reduction in income tax, grant of passages on troopships, pay while at drill, extra leave if a government servant, free uniform, etc., etc. It is obvious, however, that inducements which would attract the poorer Anglo-Indian would be quite valueless to the better class European. I am convinced that no practical scheme of material inducements can be devised which would have any real effect in increasing the strength of the volunteer force, though no doubt, competent volunteer officers could suggest some minor improvements in the conditions of service that would remove certain grievances.

III. Ever since the inception of the volunteer movement proposals of all kinds have been frequent  
**Improvements.** having the aim of increasing the numbers enrolled and all those having any prospect of success have been tried. Yet in 1916 as in 1883, in 1892 and in other years between, there is a feeling that something is wrong and that some steps should be taken. In my opinion there is one way left untried, one practical way of increasing the value of the force, while at the same time retaining its essential characteristics of a volunteer force and that is, by improvement in its organization, training and equipment, and by giving it a definite and real place among the armed forces of the Empire. If the efficiency of the force be improved, its value is increased and its attractions to the intelligent man will be greater. Whether the actual numbers can be increased by this it is hard to say. We have tried the reverse; the reserve system approved in 1889 was obviously designed to attract men by the absence of work, yet the response was small. Our standard is extraordinarily low, yet far too many of the better class men will not join, or join only under the stimulus of a great war. The drudgery of infantry work in the ranks, the make-believe of the ordinary field day and even much of the shooting is boresome in the extreme to the man with a mind, he cannot even connect such work with any possible service he might be called upon to perform in time of trouble. He knows that he would be quite useless in line with



regular troops and realizes the impossibility of his battalion ever fighting as a battalion. What then is he for, and why is he not trained for that purpose? His equipment is not likely to fill him with any enthusiasm, as, apart from its meagre and often ancient character, it does not seem to be the best possible for any service he might be asked to undertake. Interest the man in the work, give him a definite place in the Imperial forces, equip him in the best way possible for the work required, suit the conditions of service to his private responsibilities, and you should get all the men worth taking.

In any consideration of this subject it is essential to remember that there are two sides to the question,—what we would like to attain, and—what we are likely to get. We have to deal with a human factor, and moreover a perfectly free human factor, and it is quite useless to talk of any ideals impossible of attainment.

The first step to be taken is to settle what duties the volunteer force in India, as an integral portion of the armed forces of the Empire, may reasonably be asked to undertake. A force of 50,000 men of British blood is worth taking some trouble about, especially in a country like India. There are three duties which it can, and should, undertake—

- (A) Assistance to the civil power in local disturbances.
- (B) Maintenance of British authority in relief of the regular garrison in times of major military operations.
- (C) Assistance to the regulars in the field by means of special technical and other units.

(A). Assistance to the civil power in cases of local disturbances has been given frequently by volunteer units and such help has been of the greatest value. The local knowledge of the men has been useful and moreover it is always wiser politically to deal with local troubles by means of local resources. It cannot be said that organization, training or equipment have been specially chosen for such a role; but the troubles have, as



a rule, yielded rapidly to the use of force and have thrown little strain on the volunteers called out. This duty is in reality little more than that of an armed force of police called upon only when actually required.

(B). At the outbreak, especially, of any great war each man of the regular standing army is of the greatest possible value, he represents the highest standard of training and is immediately capable of action. Each man kept back for garrison duty represents a dead loss to the striking force of the field army. The question which should be asked is, to what extent, under reasonable probabilities of organization, training and equipment, can the volunteers relieve the regular garrison in India on the outbreak of a great war? This question cannot be answered here, it is one which requires detailed examination by experts in each district. We can make, however, a few general remarks on the three main divisions of the question.—(i) Organization, (ii) Equipment, (iii) Training.

(i) The present organization in administrative battalions was advocated for all units by Major Collen in 1883, though the idea was not a new one. Such a grouping of scattered units under one administrative staff has many advantages; but I doubt whether it is entirely suitable to the local defence role of the volunteers. Some of these battalions have companies many hundreds of miles apart, and these companies can have nothing to do with each other so far as their probable duties are concerned. The volunteers of any station or district should be organized with a view to the probable requirements of that station or district, and be prepared on general mobilization to place a certain proportion of their strength on daily duty in relief of regular troops. While the number will remain the same the men will be changing, each man taking his turn of duty, while those not on duty will continue at their ordinary civil work. From the proportion on duty will be found a certain number for guards, the balance undertaking ordinary barrack work or undergoing such training as circumstances permit. Thus be-



sides the relief to the regulars, the corps will be constantly training, while civil life will not be upset.

(ii). Equipment requires thorough revision, even volunteers should be completely equipped for the work they may be called upon to do. A rifle alone does not turn a civilian into a soldier. Efficiency and economy go together, economy meaning 'the least expenditure of means to attain a required end'. Our required end is the maintenance of British authority, and if ten men and a machine gun will attain this in any place, it is not efficiency to keep the hundred men without a gun for the purpose. We have had many bitter lessons during the past two years on the use of machine guns, and there is no worse form of economy than to stint the supply of any equipment that will save men. Nothing could be more efficient and economical in securing internal peace than well trained volunteer machine gun detachments, using private motor cars, for which armoured plates could be arranged before hand and kept in store. The supply of other stores, such as entrenching and demolition tools, grenades, signalling and telephone apparatus, requires careful consideration, remembering that equipment is worse than useless unless it is in the hands of men trained to use it. The better the equipment the fewer the men required for a given task and the greater the relief that can be afforded to the regular garrison.

(iii). Training should have the one object of obtaining the best results with the minimum number of men. All duties likely to be required of the local corps should be practised in peace time and no parade or field day should be held without some definite training in one or other of the local defence duties. The test of efficiency should be competence in the anticipated work, and should not depend on attendance for a minimum number of hours. A thinking man prefers to be competent and will take a keen interest in every step which leads that way. Moreover, the work required from volunteers will always be work for small bodies of men, and a man can take far greater interest in work when he is a member of a small team and knows that



success depends on each man working together. Training as a member of a machine gun team or practicing defence of a treasury, for example, cannot fail to be more interesting than walking about the maidan with a rifle in company with two or three hundred other men.

(C). It would seem that one great lesson of the present war, especially for India, is, that any major military operations require the co-operation of many branches of ordinary civil activity. Soldiers alone do not make a modern army, or rather, an army of soldiers is helpless unless it is assisted by a large number of men drawn straight from their civil employment to work at their civil professions or trades. Under any system of universal service it is possible, not only to mobilize sufficient men for the fighting units ; but also to provide trained men for the various ancillary services required by modern war conditions. The majority of men taken for such services would come from similar civil work and all would have had a period of military training. In India, we can pass a large number of men through purely military training ; but voluntary service renders the maintenance of non-fighting units, especially when they are of a highly technical character, a costly business. Moreover many of these ancillary services are not largely required and in some cases are not required at all, in peace time. Requirements will depend on the nature of the military operations to be undertaken and on the theatre in which the forces may be engaged. We must rely on the civilian population, yet it is obvious that for efficiency under war conditions, all auxiliary services should be composed of men who have known military service, even slightly, and who have been prepared in some measure for the duties they will be required to perform as part of the war machine. In this war we have taken civilians, put them hurriedly into uniform and used them as motor car, motor lorry, motor ambulance and motor boat drivers, as despatch riders, interpreters, censors, stretcher-bearers, and ward orderlies. They will be found, slightly disguised, in



labour corps, employed on railway and telegraph work, running river transport and general port work, even looking after ice machines and electrical plant. At home miners are being asked to enlist in tunnelling companies at special rates of pay. Improvisation is usually dangerous, and is never so dangerous as in time of war. Surely we should be able to provide most of these special services from our volunteer force. Volunteer corps should be asked to maintain special service sections, composed in the main of men with the special knowledge required; but not excluding others who may have an inclination for the work. These sections might be raised in one of two ways,— (a) by allowing for a strength in excess of the number required for war service, giving a special extra efficiency grant, with no actual liability for active service, *i. e.* trusting to volunteers when war comes; (b) by fixing a definite strength and making all who join contract for a certain period to go on service if called upon, and giving the men some personal allowance on account of the liability. In either case, besides a minimum of ordinary military training, the special sections would be exercised as much as possible in their special work and be given occasional opportunities of serving with regulars.

These sections would still be available for ordinary volunteer duties in time of local trouble. Their normal training need not be a serious tax on their time, as the training in ordinary volunteer work, once completed, need not be repeated in full each year, while their special duties being of a more practical nature and their own choice should be interesting enough to ensure enthusiasm and zeal. From the big cities we should get sections of despatch riders, of motor transport drivers, of telegraphists and telephone operators. The big railway corps should provide organized railway companies, for construction, repair or running. Seaports could supply sections of experts in water transport or port work. Business men might form sections for supply work, though they might have much to unlearn! Space will not permit of any further elaboration of this idea; but



## ***The Volunteer Force in India.***

enough has been said to form a basis for consideration.

I can hold out no hope that the cost of the force organized, trained and equipped as I suggest, will not be considerably more than at present. 'The favourite phrase of the Indian Military Financier,—'without extra expense to the State' cannot be used if a really efficient volunteer force is desired.

There is one other matter which should be mentioned, before I conclude, and that is the possible connection between the Volunteers and the Indian Army Reserve of Officers. Before the war this reserve was a farce, its numbers were ridiculously small and its members were untrained. Since the outbreak of war every effort has been made to obtain officers; but the majority of these officers have had little previous military experience and rarely much acquaintance with the Indian or his language. No inducements were offered in peace time; but patriotism and a desire to see service have proved sufficient since the war began. The Empire is paying heavily, however, for India's neglect to put this reserve on a sound footing, as she is paying heavily for neglect in so many other matters. In January 1914, there were 40 Reserve Officers, in April 1916, there were nearly 1700. The obvious source of supply of officers is the volunteer force and with a well-thought out scheme, the connection should be of great value to the volunteers as well as to the regulars.

In conclusion, I would urge that all men with any inclination towards military service or who have any patriotic feelings should be attracted to the volunteer force and not be allowed as at present to wait till a great war comes before offering their service or trying to make themselves useful. I have proposed no startling innovations nor do I think that such are needed or would be successful. Strength and efficiency go hand in hand and no man whom we want as a volunteer will be content to remain for long in a force which is not truly efficient. The knowledge that the corps has a definite place in the armed forces of the Empire, that its training is thoroughly practical



and is fitting it to take that place, that it is also training men to assist the regular army in actual military operations, should prove a most powerful recruiting agency. Drill and training must be adapted to suit the conditions of possible service and the civil duties of the men. Give up for ever the belief that the least possible work will attract men and try the opposite idea of interesting them in the work. We may never arrive at the happy ideal of the motto of this essay; but it is worth aiming at. The 50,000 volunteers we now have are neither serving for money nor for fame, let us try whether they will serve for the 'joy of the working'.

Since this essay was written a paragraph has appeared in  
**Note.** the Press stating that one of the volunteer  
corps in Calcutta is discussing 'the formation  
of a new company composed of specialists only, to train as  
armoured car men, signallers, scouts, field telephonists and  
despatch riders'.



## **SOME SUGGESTIONS.**

BY

CONDUCTOR H. C. PARKS, I. M. L.

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If, as Johnson tells us, "the recollection of the past is only useful by way of provision for the future", an entry from an ancient Diary of 'Things Worth Remembering' might not be without interest at the present time.

With the Great War definitely behind us in 1920, there arose a most comprehensive—*the* most exhaustive—stock-taking of our ways and means of making war that the Army had ever seen. It was no ordinary scheme of improvement, replacement, or retrenchment. The military machine in all its multitudinous parts, pay, pension and procedure, personnel and paraphernalia—lock, stock and barrel—was taken to pieces, overhauled and examined with an almost microscopic scrupulosity (with apologies to the great lexicographer). What was good was made excellent, and what was merely 'fairish' or 'not too bad' was incontinently fired. Nothing short of the very best would suit. "Up to date or on the scrap heap" seemed to be the military shibboleth of every department. In short the Spirit of Reform was abroad, and it pervaded the official mind wherever found.

It is true wisdom to be teachable in spirit and to learn from any source however humble. That was the note struck by the memorable India Army Order No. 1 of 1920. But three short, strenuous years have passed since then, "and, oh, the difference to us!"

Reading between the lines of that vigorous order, and using popular language, it seemed to say 'Hang the source, let's have ideas! The Army has got to be a well-oiled machine of top-notch grade, running surely and smoothly, and withal silently, a Business with a capital 'B': in a word—IT! And in harmony with the practice in every other large up-to-date firm, suggestions from its employees, from the highest to the lowest,



from the general to the drummer-boy, will be welcomed, encouraged and, if worth anything, suitably rewarded. Novelty no bar. Nothing too large or too small. If your equipment tears your shoulders to bits, how would you propose to overcome the difficulty? You know our requirements, and you are in the best possible position to say where the shoe pinches. Well, then, how would you have the ammunition carried on the person, say? How would you run your office, your depot, your division, or whatever it may be, supposing you had to start from dot? Write us your views on these, or any other matters within your personal experience, without fear or formality. All correspondence between us strictly confidential. Only be brief and to the point. Don't bother about your writing powers: it's your ideas not your vocabulary we want!

There was never any doubt but that such an appeal would produce a great deal of what was impracticable or worthless. Much rock must be crushed before the quartz will pay its way. But the hope that here and there in the pile would be an occasional glitter of the pure element, being founded on reasonable probability, was amply fulfilled; and so the experiment was well worth the trial.

It is curious and instructive, however, to note how a change in the angle of vision gives an entirely different picture. A perusal of the first few pages of *precis* on the voluminous file of Suggestions from the British Rank and File will illustrate this; for it must be assumed that no man would own to having sent up anything but a sound idea. Through a telescope a pea becomes a pumpkin—or, of course, *vice versa*.

A. F. considers brass buttons out of place on khaki.

**Buttons.**

Polishing a nuisance. Buttons should be of leather (open collar with three leather studs, say,) strung together so that impossible to lose a single unit. Button holes on both sides. No buttons on trousers. Braces should end in leather studs or knots. Thus saving buttons, time, money, and a certain something to the dhobi.



### ***Some Suggestions.***

G. C. D. would like to see a monthly graphic, or outline map, showing staffs and troops in position. **Indian Army List.** Staffs and regimental lists in small type on back. Easily printed, read at a glance, educative. Ordinary list might come out half-yearly, and, as cover frequently gets torn off, contain the date of issue on every page.

"Don't separate the two;" writes M. S. T., "food and drink should be served together, both in limited quantities. A pot with supper is better than two pots on an empty stomach. If the canteen be rigged out like a dining room, with tablecloths, pictures, etc., and if tasty dishes be procurable, the brawniest and best soldiers would be the canteenwallahs."

F. J. says 'Departmental Lieutenant' (Captain or Major, as case may be) would be shorter and more suitable than 'Assistant Commissary with the **Departmental Officers.** honorarv rank of Lieutenant'.

C. T. A. would abolish sealing-wax on letters as a useless antiquity. Adds unnecessary weight and often breaks up in the post. Why not substitute a special stamp over which the office seal could be impressed? **Sealing-wax.**

C. T. A. also suggests that with above special stamp and office seal, postage stamps should be unnecessary, and cost of postage should be met under departmental arrangements. The mine owner does not buy his own coal. **Postage Stamps.**

G. de S. feels this to be a real want. He realises that bunks or cubicles would be expensive and perhaps less healthy in India than open barrackroom, and so proposes a simple, moveable screen of rushes between each cot for use in afternoon for siesta, reading, meditation, etc. **Privacy in Barrack-room.**



N. P. C. holds strongly that proficiency in these requires daily practice. A man should fire so many rounds as a matter of course on nearly every week day. He would have the range as the ordinary parade-ground; would abolish distance platforms and have an object like a chattie "half hidden from the eye" as the customary mark. The cow boy is usually credited with marvellous powers as a revolver shot. His proficiency would be the reward of the officer or warrant officer who handled his weapon as often. To shoot or to wield a bayonet skilfully are not the simple operations they appear. The easier the performance of the expert the harder the work.

**Shooting and Bayonet Fighting.** M. G. B. L. would have only one number not exceeding four figures on letters, etc. To wire 'Your Letter Numbers. 52139A-General No. 6873-14 (A. of W.)' is to use up the cost of a small message before it begins. Numbers should be given to cases or files, not to individual letters, and a new series should be commenced every year.

To expedite business G. F. G. suggests that only important communications should be in letter form requiring signature. Routine correspondence should be issued as memoranda on which would be impressed a printed signature. The approved draft of a memorandum or telegram should be passed to the Issue Section for copying and posting or despatching, without further reference to the Section concerned. Memoranda and India Army Orders requiring printing should be sent to Press to be set up and issued, no proof being submitted. In all such cases the issuing authorities should be held responsible for correctness.

**Signing of letters and Memos.** To encourage thrift, A. D. Y. thinks it would be a good thing not to pay out in cash but to place the amount to the credit of each man in the local Post Office Savings Bank for him to draw on as required. Loose rupees burn a hole in the pocket. Would save not only money but trouble all round.

**Thrift.**



### **Some Suggestions.**

F. N. R. holds that typewriting everything very often merely sacrifices time to appearance. Puts a premium on illegible handwriting. Office notes are usually first written and then typed. Typewriter should save not duplicate work.

Thus F. B. W. "The fostering of patriotic sentiments has borne fruitful results in the Japanese Army, and is not to be sneezed at. Framed mottoes, or rather pithy sayings of great soldiers and sailors, in the barrackroom would do an immense amount of good. They would sink in. Heavy military literature is not much studied by the average Tommy, but he loves a good professional tag, *e. g.*, "Pray, but keep your powder dry" or "The path of duty is the way to glory", or "England expects", and so forth. A large wall map of India and another of the World in every barrackroom would also be a real boon to soldiers, who like to know exactly where they are and where things are happening. The study of a map of British Possessions broadens a man's mind and adds to his pride of race."

N. M. S. would summarize C. Rs. to form a brief "character" describing the individual as he is and not as he was. Faults eradicated should not be mentioned. Alter or rewrite character as necessary only, and this alone should ordinarily be produced when the individual's name 'comes up'. This would save time and do full justice to the 'subject under consideration'.

M. D. feels that if the daily post were opened by a Standing Board of fully responsible officers and experienced clerks, with power to answer 'off its own bat' all but big questions, much time and labour would be saved. A stern eye could be kept on questions which should not have been referred, and any tendency to centralize work strongly resisted.



E. H. E. complains that the regimental school does not carry a man far enough. It should be possible to reach the Matriculation standard in the regiment. He should also be able to learn trades and sciences and so fit himself to fill high positions in and out of the Army. The years spent in the service should not, from the point of view of civil life, be regarded as a lamentable waste of time. Every large garrison should have its Polytechnic. The deeper the education the better the soldier.

**Education.**

"How many official letters," queries P. H. H., "fill up both sides of a foolscap sheet? Do many get much more than about half way down one side only? Official letter paper should be half the size, with envelopes to match.

**Foolscap.**

"Would it be possible," asks W. E. M., "to 'fix' the bayonet at right angles to the rifle, somewhere about the upper band, in such a way as to form a rest when firing at long distances? Cover is not always obtainable, as, for example, when advancing in short rushes, or, if found, is often too low to be of use. A peg in the ground would give a quick steady shot to even an excited man."

**Long Range Steady Shooting.**

D. B. holds that every man in a regiment should know its history through and through, he should be saturated in the traditions of the 'dear old corps.' The officers should teach it, the men should be examined in it, and one of the qualifications for the stripe should be proficiency in regimental history.

**Regimental History.**

F. I. Y. considers the firing of salutes excessive. Guns should be reserved for the highest form of salute—for the Sovereign alone. A fanfare of trumpets at the station, costing nothing, would probably satisfy the dignity of lesser personages, many of whom would doubtless prefer such a sound change.

**Firing Salutes.**



**Somo Suggestions.**

"Why not buckle boots?" writes G. J. "A man could get in and out of them in a moment, and at times this is of consequence, and since there has never been a charge or a hand to hand conflict without the loss of much headgear, why not fasten the hat to the coat?"

**Boots and Hats.**

C. B. O. thinks it a pity to throw these away after extracting the contents. The sender should be required to write on them his designation, number and date of letter, with brief *precis* of subject. Torn flaps being removed, they would take the place of the Inward Register. Would save valuable paper and time.

**Used Envelopes.**

W. V. is convinced that separate noting wastes time and makes for difficulty. File should read like a book : first the cover with title, then correspondent's letter, followed by the notes, if any necessary, and the reply, all strung together in chronological order. No *precis* writing as a rule, merely a reference to page number. Would speed up disposal of cases tremendously and follow Field Service procedure.

**Separate Notes.**

"One kind one colour for all in each arm of the service," is the suggestion of H. N. O. Add chevrons, badges, stars, armlets, as necessary. Would emphasise oneness. Some changes of rank mean a new outfit at considerable expense.

**Clothing.**

"Lead to watertight compartments, loss of power, uneven labour, overlapping, and a solicitude to transfer work elsewhere," says A. B. E.

**Small Sections in Offices.**

"Would a book of specimen form headings be useful in keeping down the growth of this administrative evil?" enquires W. P. C. An added column or altered heading would often save a new form.

**Forms.**

"No swords in any units except cavalry : an automatic pistol is the modern weapon," says K. N. W.

**Swords.**



T. H. Q. thinks this best 'every time'. A machine  
**Military Men in Military Offices.** requires a machinist. A military man who joins a civil office must become a civilian.

T. G. B. would issue a 'glorified index' of all the  
**Regulations.** Indian Army Regulations, a sort of dictionary or Jack's Reference Book in miniature, every rule in brief being found within one cover, arranged not only under main headings, but 'catch words'. He thinks a couple of hundred pages in small type, including appendices, would suffice for the needs of most. Every recognisable abbreviation should be used. Reprint frequently, rather than clog with amendments. "What do the regulations say?" would be answered at once. It would make an officer independent of his clerk. It would save time and ensure no regulation being overlooked. Big volumes could be issued on very limited scale, and so save expense. T. G. B. also thinks that all Field Service books should be issued as separate chapters of one book, in such a form that they could be 'assembled' to make one volume, with a table of contents.

H. J. N. thinks it would be an advantage if, when a  
**Recording.** file is done with and comes to be recorded, a brief narrative or statement of the case be substituted for the notes, which could then be destroyed. There are few files in which the notes could not be condensed in a page of narrative, which would be easily digested and save a reader's time. Saving in bulk considerable. There should be only one method of recording, and all files should be recorded alike. The indexing of "proceedings" should be on a strictly alphabetical basis, a file being found both under its 'key' word and under its appropriate heading.

W. E. R. would like to see a daily paper devoted to  
**Army Newspaper.** the needs of the Army in India. It might be run by disabled officers, but it would be an official organ containing everything of interest to the officer and man, including Reuter's Telegrams, India Army



### ***Somo Suggestlons.***

Orders (which might disappear as a separate publication), Gazettes, circulars, notices of military books and translations, inventions, foreign armies, etc., etc. Under "Answers to Correspondents" it could insert replies to all non-confidential correspondence, thus obviating many similar enquiries. It would make for uniformity in practice and procedure; it would keep absent officers up to date; it would absorb a great mass of pamphlets, leaflets, correction slips, station, brigade and divisional orders; and, having in view its wide circulation, its advertisements should cover its additional cost.

The suggestion of P. S. W. is that pay throughout the **Pay, Promotion, and Pension.** Service should be on a yearly incremental basis—perpetually recurring increments. He would fix a minimum but no maximum. For example, say the minimum wage of a military clerk was fixed at Rs. 140 per mensem, and the yearly increment at Rs. 20. In 20 years he would be drawing Rs. 540. There would be no "grades" or officiating pay questions, no long halts, or spasmodic jumps. Contingent on favourable reports, a rise of pay every year could be reckoned on with certainty. Outstanding merit or specially good work could be rewarded by one or more increments; it would depend on the individual himself whether he advanced normally or rapidly, or whether he stood still or went backwards. Rank to follow pay automatically, two increments, says, conferring the rank of Staff Sergeant, six, Sub-Conductor, twelve, Conductor, and so on. Pension, alter a fixed period of years, on half-pay basis. To meet the upward trend of the cost of living, add to minimum wage of one and all. P. S. W. adds that his idea is only a rough one, but believes the principle could be applied to all ranks. It would solve or simplify many difficult problems, bring out the best in a man, advance and so keep the best, allow him to calculate his prospects, when to get married or to take furlough, and give him a clear conscience that his rise was due not to another's fall, but to his own merits.



# **THE FUNDAMENTAL STRATEGICAL PRINCIPLES OF WAR. \***

BY

MAJ.-GEN. SIR C. V. F. TOWNSHEND, K.C.B., D.S.O.

The fundamental principles of strategy as established by Napoleon, the founder of modern strategy, apply equally to strategy and higher tactics on land or sea.

Let us briefly enumerate these principles:—

- A. The principal objective in strategy.
- B. The principle of economy of force
- C. The principle of the mass.
- D. The principle of the strategic offensive.
- E. The principle of rapidity or economy of direction.
- F. The principle of security.

## **A. The principal objective should be the bulk of the enemy's forces in the field.**

"The first objective should be to conquer the enemy's army." (Hohenlohe).

"To seek from the commencement, with all his forces, the bulk of the forces of the adversary". (Moltke).

This is in fact the principle which stands out throughout the Napoleonic Wars.

However, a general direction must be given to the group of armies, and this general direction will be evidently imposed by military, political, perhaps even economic, considerations; in this way we come to a geographical objective. Very often armies will place themselves in front of that which they consider most precious to defend, *i. e.*, generally the capital; example—the Bulgarian armies by moving on Constantinople encountered the bulk of the Turkish forces in the field.

In 1870 Moltke gave the following indications: "General direction, Paris; objective, the enemy wherever he may be."

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(\*This article was written prior to the outbreak of the present war. Ed.)



This must of necessity have been the order of General Savoff to the Bulgarian armies.

It would not be sufficient merely to indicate the objective—the enemy. It is more than ever indispensable, with the enormous armies of to-day, that everyone should have clearly fixed in his mind the object the strategist is pursuing so that even in battle the initiative of all develops conformably with the intentions of the chief, of the one who conceived the manœuvre. Moreover, as Jomini justly remarks in strategy and tactics, combinations reduce themselves to three; the principal effort can be made against either the centre, the right or left of the enemy. But it is necessary that everyone, from the private soldier up to the commander of an army, should be clear as to the main intention.

The strategist should see not only the battle, he should regard beyond that. If victorious, evidently one will pursue the enemy, who will probably retire in the direction which he has interest to cover, and which is likely to be that one the victorious strategist would have chosen. It is then rational that the pursuers should know this direction, so as not to launch themselves in false manœuvres. This is the reason why a turning or enveloping movement both in strategy and in tactics is always directed against that army of the enemy which is nearest his line of retreat.

It might be contended, supporting the objection on the well-known aphorism of Napoleon, "one engages everywhere and then one sees," that it is on the field of battle that the Commander-in-Chief must choose the zone where he will deliver the *coup de marteau*, and that to determine it before actual contact would take the character of a preconceived idea. This aphorism could be well justified on the battlefields of the commencement of the 19th century; at this epoch, the Commander-in-Chief could see with his telescope the terrain where one was fighting, and owing to the smallness of the field of battle could bring fresh troops to bear on a given point where they could arrive in suffi-



cient time to strike a decisive blow.

With the extended fronts of battlefields of to-day, very many miles in the case of a group of armies, this is no longer possible. The strategist can be kept *au courant* with the different incidents developing on the field of battle by means of the telegraph and the telephone, etc., but if he has to shift the army charged with the principal effort, there are great chances that it will arrive too late and strike into space. Example—the premeditated advance of Nogi's Third Army from Port Arthur was directed so as to turn the right flank of the Russians *i. e.*, that flank lying nearest their line of retreat.

The decisive victory having been gained, to put it to profit by an unrelaxing pursuit; then to march on the enemy's capital to take possession of it.

### **B. The Principle of Economy of Force:—**

This requires us to concentrate every man to fight, dispense with no one, avoid dissemination and useless detachments. Simultaneous effort accompanies economy of force. The French define this principle as concentrating your maximum mass against the principal objective, and the minimum to the secondary operations. Napoleon violated this principle with which he gained his great victories in 1813 with the result Leipzig, and again in 1815 at Waterloo, when he detached Grouchy with 40,000 out of a total of 100,000, and was crushed for ever. To violate this principle generally means disaster. History proves that when the army or armies of a power violate the principle of economy of force they are apt to be beaten—notable examples in Napoleonic Wars and other wars of the 19th and 20th Century are as follows: Austrians in 1796, Austrians in 1805 (Mack at Ulm), and in 1866 (when they detached 80,000 men into Italy), Prussians in 1806, Napoleon in 1813 and 1815 and by keeping armies in Spain from 1811—1812, the French in 1870, the Russians in 1904 in Manchuria, and the Japanese by detaching Nogi and the 3rd Army of 150,000 men to besiege Port Arthur. Luckily for them Stoessel did not do his duty, so Nogi was able to rejoin, just before Mukden,



the bulk of the Japanese forces. The Balkan allies instead of uniting their mass against the principal objective *i. e.* the bulk of the Turkish forces in the field which they could have easily crushed and then occupied Constantinople, each pursued their own selfish objectives. The fatal result was soon apparent.

### **C. Principle of the Mass.**

The principle of the mass, and the principle of economy of force should go together as they are in reality one principle.

This principle and that of economy of force won all Napoleon's great battles and campaigns. Jomini tells us that the fundamental principle of all combinations consists in operating with the greatest mass of your forces, and with simultaneous effort on the decisive point, which should be the enemy's weakest point, either one of his flanks or the centre. Napoleon wrote to Massena when he ordered the latter to proceed to Portugal in 1810, to "attack the enemy's weakest point with the greatest possible numbers," in other words, seek the weak point of the enemy and act on that point *with your mass*. Examples are 1805 (Ulm, where the Austrians had detached Mack to Ulm, violating principle of economy of force) and so Napoleon enveloped both flanks, being in greatly superior numbers; Austerlitz—Napoleon hurled his mass against the centre of the over-extended Austrian position. Eylau, Friedland, Jena, Wagram, Bautzen, Ligny are examples of the enemy's weak point being the flanks, and Gravelotte, Koeniggratz, and Mukden are examples of the flank being enveloped or turned. Only twice did Napoleon find the enemy's weakest point to be in his centre.

### **D. The Principle of the Strategic Offensive.**

"The strategic offensive alone conducts to victory."  
(Napoleon).

"To make war is to attack." (Frederick).

The case of a smaller power, like Switzerland or Denmark, against Germany it is obvious would not count in this principle, which applies to powers constituting sensibly equal forces.



An English Army landed in Belgium could not assume the offensive against vastly superior German forces, entering Belgium, but the English Army forming the extreme left of a group of French Armies could do so; this will show you where the most desirable position and role for the British Expeditionary army will be.

That the strategic offensive alone conducts to victory is proved by the wars of 1796, 1800, 1805, 1806, 1807, 1809, 1866, 1870, and the last war in Manchuria. In face of that, it is surprising to find Jomini, and especially Clausewitz, saying that the defensive is the strongest form of war. Victory will always be to the General (strategist or tactician) who will attack with all his forces united, covered in all directions, who will act without delay, and who will strike the enemy's weakest point with the greatest possible mass.

In the war of armies as it is to-day, the strategic offensive is not only advantageous, it is indispensable. The strategist who directly he has concentrated his masses (principle of economy of force) will then deliberately move forward in the general direction of the bulk of the hostile forces in the field, and will operate with the principal and secondary mass against that point (flank or centre) which true strategic principles demand, will have the greatest chance of success, given that he has sufficient knowledge of the whereabouts of the enemy. This information should be supplied to him by his intelligence department, espionage before and after declaration of war, his strategic cavalry, and by those new agents of information, aeroplanes.

The Russo-Japanese War is particularly instructive and interesting on this point. Kuropatkin thought that he could not advance and deliver battle until he was accurately informed as to the enemy's strength and positions. Now that is the kind of information which in these days he is not going to get in a precise manner, nor did Kuropatkin get it, and he waited inactive and was beaten in consequence.

To sum up the strategical lessons of the war in Manchuria



they are as follows:—The war showed that the strategist cannot wait for information before taking the offensive, and that because he will never get complete information. As soon as he has formed his plan and has concentrated everyone, he should have only one idea, to march straight on his objective (the bulk of the enemy's forces in the field) with all his forces united. If espionage, cavalry, aeroplanes, assist him with information on the road so much the better. He should not move forward until he has concentrated all his forces, or otherwise he would violate the principle of economy of force, it does not matter if the enemy advances a few hours or days before him, he is not going to allow the enemy to impose his will on him as regards the choice of a point of attack.

#### **E. The Principle of Economy of Direction or the Principle of Rapidity.**

The shortest and most judicious road to the desired goal, *viz.*, the bulk of the hostile forces in the field.

“Movement is the law of strategy” (General Foch). Act quickly and without delay—1796, 1800, 1805, 1806, are Napoleon's most brilliant examples of this principle, and those which had the greatest effect on the results of the battles. From 1807 onwards he loses his great rapidity, we no longer see this principle standing out, and in consequence his battles become only half successful. He showed us Bonaparte again in this respect in 1814, but then it was too late; his enemies had become too numerous.

The move of his Army to Belgium in 1815 is a great example of this principle. Both the Japanese and Russians undervalued this Napoleonic principle.

#### **F. The Principle of Security.**

Keeping one's liberty of action and manœuvre by means of strategic cavalry supported by mixed detachments (armies of the flank or flank guards, etc.) is a great means by which you can impose your will on the enemy and not submit to his.

Examples are furnished by Napoleon, the founder of modern



strategy, in almost all the campaigns he directed. In 1796, the war in Italy, the first essentials to make his manœuvres based on his interior lines succeed, were to assure the most complete liberty of action to his little army. Then we see him equally faithful to the principle of economy of force, uniting all his disposable divisions and moving in succession against the armies of the enemy, who had violated the principle of economy of force by dissemination.

Each time he marched against one of these disseminated fractions of the enemy, he took care to cover himself in all dangerous directions with the minimum force he could spare. In this way he was able to strike a blow without fear of interruption. This he did adding the principle of rapidity. One can say from a strategic point of view that the campaign of 1796 will remain a model type *par excellence*. In 1805 campaign, Ney and Augereau are sent with flank guard corps to the Tyrol and Bavaria. Bonaparte overdid the principles of security in 1800, and was nearly defeated at Marengo in consequence. He was only saved by the spirit and decision of Desai.

In 1806 he launches a strategic advanced guard in the shape of a whole army corps in the front of his army so as to obtain liberty of action. All his campaigns show that strategic security has always been one of his first preoccupations. In 1866 both Prussians and Austrians neglected the principle, with the result that at Koenigratz, Benedek fought a battle which responded in no way to his original intentions, and Moltke engaged a part only of his forces against the principal mass of the Austrians without being sure of the co-operation of the other part. In 1870 Moltke did not show any pronounced application of this principle. The Japanese General Staff on the other hand showed that they thoroughly understood the principle of security in the late war in Manchuria. Examples:—A Division is disembarked at Chernalpo to cover the disembarkation of an Army in Korea. After the Yalu battle this army crosses the Yalu to cover the disembarkation of the



other armies in the Liaotung Peninsula. The I., II. and IV. armies terminated their concentration 3rd August, 1904; at this moment they occupied the following positions just before the commencement of the great hostilities. I. Army (Kuroki) concentrated on the left bank of the Lanho; IV. Army (Nodzu), forming the centre, occupied the valley of Seda-ho. Lastly, the II. Army (Oku), which constituted the left, was in the environs of Haitcheng. To sum up, their strategic front went from Lanho to Haitcheng, forming a vast semi-circle stretching out approximately in a length of 70 kilometres or about 43½ miles.

On the subject of this concentration a great strategic fault was committed by the Japanese General Staff. Their strategic front stretched to some 200 kilometres (over 124 miles) in June 1904, after the battle of the Wafangon, when the Japanese Armies occupied the following positions:—I. Army (Kuroki) at Feng-hoang-teheng; IV. Army (Nodzu) near Siongen; II. Army (Oku), which had just won the battle of Ouafangkeon, or Wafangon, was still in the neighbourhood of this locality. Their situation had been imposed on them by circumstances; they had a maritime base and no facilities for revictualling. But that which one is not able to understand is that when the Japanese Armies' forward march was decided on, and they had received the Russian Forces concentrating south of Liao-yeng as the principal objective, they did not commence at once to close in the strategic front, so that they could move united in a single block against their objective, when they were scarcely three marches from the Russians. Instead of that, each marched on his own, and each delivered his own combats! With an enemy more of a "Manoeuvria", and with a more offensive temperament than the Russians, the Japanese armies would have run a good chance of being crushed one after the other.

They arrived then in this way on the front Haitcheng valley to the Lanho, as described above, in August, still much extended but acceptable. Note the arrangements of Marshal Oyama in the above connection and the measures he took with regard to



the principle of security to gain liberty of action and liberty of manoeuvre. Having taken command of the group of armies in July he ordered the I. Army to push out to Pensckontenschen, about 30 Kilometres (17 miles) from the Lanho Valley, a strong detachment of three arms. In the same way he prescribed to the Second Army solidly to occupy Hioutehang, equally situated at a long march from Haitcheng. The Japanese Armies as far as space was concerned then found themselves in an excellent situation.

The Russians on the other hand were stretched out some 40 kilometres, *i. e.*, 25 miles, for 145,000 men, much too extended for their strength, their strategic security was uniquely assured by the cavalry which was not sufficient to permit manoeuvre, even tactical manoeuvre. This is all the more strange from the fact that Kuropatkin recognised this necessity just before the battle of Wafangon (14—15th June, 1904), when in order to have liberty of action he sent strong mixed detachments in the direction of the enemy. The one under General Keller installed itself near the col of Motien-Leng, himself covered by the cavalry Division of General Reunenkampf. The other mixed detachment commanded by General Zaronbarif was sent to Tachekiao. He received as cavalry, the cavalry brigade (Michtchenko). This is a very interesting application of mixed detachments, advocated by General Langois, who have no other object but to assure liberty of action to the strategist.

The principles of the German Staff in strategy are based on the Napoleonic fundamental principles:—

A. 1. The first object is the enemy's army; and the aim to destroy it.

2. With this view to march against it with several groups of columns preceded by a numerous cavalry, charged with the duty of discovering where the principal mass of the enemy is.

3. To adopt a front march proportioned to the distance to which the army is reconnoitred in front, in such a way as to enable the army to concentrate in one or two days to fight.



4. The principal mass of the enemy once being found, one will converge the groups of collateral columns on it in such a manner as to attack it simultaneously in front and flank, and to cut its principal line of food and supplies.

5. The decisive victory having been gained, to put it to profit by an unrelaxing pursuit; then to march on the enemy's capital to take possession of it.

6. To cover the two flanks of the line of communications with the mother country by mobile armies, and to reduce troublesome fortresses.

B. From the tactical point of view:—

7. In tactical marches, in lines of divisional columns, to keep the artillery near the head of columns, and the munitions behind the combatant troops. To explore the front and flanks with cavalry. To utilise cyclists for communication in rear.

8. Outpost duties : instead of contenting oneself with observation on the spot, to send out successively detachments and patrols to discover and seek the enemy, and to watch the flanks to a distance.

9. In an offensive combat, to proceed at first by a minute reconnaissance of the dispositions of the defender, and to ascertain where his two flanks rest. To place the bulk, the mass, in such a manner as to attack the front and flank of the enemy's position, *i. e.*, always hold in front and envelope a flank. To dissimulate the march of approach as long as possible by the aid of cover and depressions of the terrain. In acting with superior forces against the wing of the defender, to contain simultaneously his front by a numerous artillery.

10. In the defensive combat, to support the flanks by obstacles or localities; if not, to dispose echelons in succession behind the flanks. To send the cavalry or mixed detachments to seek out the attacker in order to ascertain from what direction he is approaching. To dispose the general reserve on a wing, well masked, so that it can make a counter-attack at the decisive moment. To bring up the ammunition behind the



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line of combat. To create field works on the front and the flanks, masking them with care. To open up roads and a telegraph line in rear of the front.

The above principles laid down by Moltke are entirely taken from Napoleon's fundamental principles.



## **FRONTIER MOUNTAIN WARFARE.**

BY

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(Continued from January issue page 126.)

### **V. Rearguards.**

The principles laid down in Field Service Regulations, Part I Sections 71 to 74, apply in a general way to rearguards in mountain warfare against Pathan tribes, but some of the details in these sections are necessarily inapplicable to the special conditions with which we are concerned. For instance, references to the use of Engineers in a rearguard cannot be applied to warfare against an uncivilized enemy who is in no way dependent on roads, railways or other civilized means of communication.

Where the ground is suitable, as is seldom the case, cavalry that have been well trained in dismounted action, as well as in the old traditional methods, are of the utmost value in mountain warfare, but then only as an auxiliary to infantry. When used under such circumstances cavalry must be prepared to follow the methods that experience has proved to be suitable for infantry, to look upon their horses as merely enabling them to "get there" quickly and to wait long and patiently for an opportunity to use the beloved "arme blanche."

The chief work in rearguard actions, as in all other details of mountain warfare, inevitably falls on the infantry.

It is in our retirements, more than in any other operations of such warfare, that the real fighting quality of our enemy is demonstrated as well as the stamina and training of our own men most highly tried.

From his nature the Pathan is a better fighter in attack or in pursuit than in defence or retirement.

Nothing is more astonishing to the inexperienced than the sudden change from the apparent cowardice and feebleness



of some of the frontier tribes when our troops are attacking to the most dashing and reckless courage of their advance when it is our turn to retire.

Hence, partly, the emphasis laid in Field Service Regulations on the fact that "a vigorous offensive, strategical as well as tactical, is always the safest method of conducting operations" against an uncivilized enemy (1). But the Pathan dislikes attacking uphill so that his offensive spirit, even when pursuing, is easily checked when our troops are in a position to forestall him on commanding ground (2).

It is only training or education, or both, that can enable human nature to fight as well under apparently adverse circumstances as when hope runs high and success seems near.

Thus the most difficult operation to carry out successfully in frontier warfare is a retreat when pressed  
**Retreat or withdrawal.** by tribesmen well-armed with modern rifles and flushed with the elation of pursuit and, probably, a burning desire for revenge.

Whatever may be the occasion, withdrawal from a piquet position, return to camp after a raid or the burning of an enemy village, or the return march to our own territory after a punitive expedition, the tactical principles involved in the withdrawal of a piquet from the position it may have held for several hours will hold good in all (3). Troops that thoroughly understand the theory and practice of the withdrawal of a piquet will not go far wrong in any other of these operations of retirement (4).

We are told in Field Service Regulations that "The conduct of a rearguard, more perhaps than  
**Commander.** any other operation in war, depends for its success on the skill and energy of the commander" (5).

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- (1). F.S.R.I. Sec. 141-4.
  - (2). *Small Wars* p. 293.
  - (3). *Small Wars* p. 324 etc.
  - (4). *Small Wars* p. 216 etc.
  - (5). F.S.R.I. Sec. 72.



This is of course, in a general way, quite true in mountain warfare, but perhaps to a more limited extent in operations on our north-west frontier than elsewhere.

In the special kind of warfare with which we are now concerned the skill and energy of the commander of a rearguard are of course of very great importance. Any serious tactical error in the commander's dispositions of his rearguard may have the most disastrous consequences. But it cannot be disputed that there are occasions when the successful conduct of a retirement in frontier warfare depends more upon the training and quality of the troops, upon the correct handling of units such as companies, platoons and sections and upon combination between these units, than upon any qualities of the rearguard commander. In other words, we come back to the truth of what we are told in Field Service Regulations Part I, Section 141-2, regarding the importance of self-reliance, vigilance and judgment in savage warfare.

The time factor is one that is of primary importance in frontier warfare. A well conducted retirement takes time, and only experience and judgment will enable a commander to estimate how much time is required in any particular case. Thus we are told in Field Service Regulations that "It is of first importance that all retirements be commenced in ample time to ensure their being completed before dark, and that the ground over which the retirement is to be effected should have been previously reconnoitred" (1). This selection of the time for beginning a retirement is one of the first points in which a rearguard commander's skill may be put to the test. Colonel Callwell gives us some very definite instances illustrating the danger of neglecting the time factor particularly where a withdrawal is in question (2).

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(1), F.S.R.I. Sec. 142-5.

(2), Small Wars p. 313.



The principles laid down in Field Service Regulations Part I. Section 72, regarding the employment of Cavalry and Artillery to cover the retirement of the slower-moving infantry are usually reversed in the kind of warfare with which we are here concerned.

The nature of the country is generally such that infantry can move faster than either cavalry or artillery, though there are, as we have pointed out before, occasions when cavalry can, with a combination of mounted and dismounted action, be employed to cover the other arms.

Artillery too—although invariably covered by the infantry—is of special value in retirements. The object of the guns is then more to prevent casualties than to inflict loss on the enemy.

It is in this respect that we have our chief advantage over our enemies in frontier warfare. The judicious use of a few rounds of shrapnel will often do much to simplify what would otherwise be a most difficult withdrawal from a piquet position.

Owing to the fact that our enemy is not provided with artillery the covering fire of our guns may often be utilized at ranges that would be dangerously short under other conditions.

That is, in frontier mountain warfare we can and should expect the closest support of artillery, and infantry must be prepared to co-operate with mountain guns as intimately as we now see them doing with every class of artillery in trench warfare.

Close communication between the rearguard and the main body is of very special importance in frontier warfare. When a rearguard is likely to be pressed it is a good plan to detail a selected officer to ensure that the main body shall keep touch with the rearguard.

In Field Service Regulations Part I. Section 144-9, we are



told that in this kind of warfare "It is of special importance that the main body should keep touch with, and regulate its pace by, the rearguard."

In a withdrawal in which it has not been found possible or advisable to send the baggage columns in advance of the main body, which would be the usual procedure when the enemy's maximum effort is expected to fall on the rear of a column, some sub-unit from the main body should be detached at the tail of the baggage and specially charged with the duty of maintaining communication between the main body and the rearguard. In such a case the officer commanding this sub-unit would be the one selected for this duty. Colonel Callwell's views on this subject again deserve the most careful study (1).

In *A Frontier Campaign* by Fincastle and Lockhart, page 125, etc, we find an excellent example of the danger of neglecting these precautions in dealing with an active and well-armed enemy.

Referring to Field Service Regulations Part I, Section 73, the only expedients for delaying an enemy's advance that can usually be considered applicable to frontier warfare are:—

**Expedients.**

1. Setting fire to wood, scrub etc.
2. Ambushes and counter-attacks.

An ambush, where the enemy has been proving too active for our comfort, is often attended with the most satisfactory results, but such an ambush must always be adequately supported by means of covering fire etc. A counter-attack, or an ambush on a magnified scale, is perhaps an even more effectual way of easing the pressure exerted by an active enemy. This is sometimes necessary in the event of casualties occurring in a rearguard as it is an invariable rule that no wounded are to be left in the enemy's hands. An excellent example of such a counter-attack was that carried out by Colonel Haughton in 'Tirah in 1897 (2).

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(1). *Small Wars* p. 220, 320 etc.

(2). *Small Wars* p. 224.



Another first principle in this kind of warfare is the absolute necessity of rapidity of movement in all withdrawals.

**Rapidity.**

We are told in Field Service Regulations Part I, Section 142 -6, that "such rapidity can be combined with precision of movement and complete subordination to the will of the commander, but to ensure this on service frequent practice in peace is necessary" (1). Therefore, in training, men should never be allowed to move slowly down hill. Rapid movement down hill requires hard and continual practice and withdrawals in Frontier Warfare are nearly always down hill. Men who have not been brought up in hilly country are frequently hopelessly slow in their movements on bad ground, but a great deal can be done by training and practice. When in position during a retirement there should be as little movement as possible, but when the time for movement does come it must be at top speed. The author makes no apology for repetition on this point. It is one that cannot be too strongly emphasised. At the same time it must be understood that there is no need and no excuse for constant doubling when men are under cover or adequately protected by good covering fire.

In preparing for a retirement most useful work can be done by artillery or infantry in obtaining the ranges of every point that is about to be evacuated.

**Ranges.**

In the case of infantry one of the most practical ways of setting to work is to select some prominent point or object about level with the position from which another piquet, platoon, or section, is about to withdraw and to fire a few sighting shots before the withdrawal is begun. The unit concerned may then be kept ready to open a most accurate and rapid covering fire if necessary the moment the piquet it is covering has moved below the crest.

The same principle may equally well be applied to the

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(1). *Small Wars* p. 221, 222.



covering fire of Lewis guns, machine-guns or artillery, but naturally communication between an infantry piquet and a battery commander, at least 1500 yards away, is by no means such a simple matter as that between two parties of infantry some 400 to 600 yards apart, probably belonging to the same battalion, and accustomed to working together. Officers and non-commissioned officers of infantry, in mountain warfare should neglect no opportunity, whilst in position, of so fixing as accurately as possible the ranges of all points on which they may be able to direct useful covering fire. Every piquet, company, platoon or section, must in this way help every other at every opportunity whether of its own battalion or another. If all ranks are loyally accustomed to combine on these lines success will be assured and casualties will be reduced to a minimum.

The conduct of a "dribbling" retirement such as that explained in Field Service Regulations Part I, Section 144-ii, (latter part) is difficult to carry out and should seldom be necessary if really good arrangements have been made for covering fire. But since such arrangements may at any time break down owing to unforeseen circumstances, this "dribbling" must be practised. The principle however remains the same as those men that have been sent away first will, if necessary, supply the covering fire which should deny to the enemy the crest that is evacuated by those who have been left to the last.

We will now turn to the details of withdrawals of piquets in frontier warfare from which, it is hoped, our readers will be able to get a good idea of how all retirements should be carried out.

**Details.**

- (a). A rearguard is usually provided with a large square red flag under brigade or regimental arrangements. This should be carried at the tail of the main guard.
- (b). In the author's last article on advance guards the duty of the piquet commander as to reconnais-



sance and forethought in preparation for withdrawal was referred to.

- (c). When the piquet commander sees the rearguard flag approaching he must make his preparatory dispositions for withdrawal, sending down any covering party he may have decided on so that the piquet can be withdrawn directly it receives the signal from the rearguard commander.
- (d). The signal to withdraw is usually given by waving the flag to attract the attention of the piquet, signalling the number of the piquet as in giving the number of hits on a target on the range, and following this by a circular movement of the flag as for "retire."
- (e). The piquet commander must:—
  - (1). Hold on to his position at all costs until the order to withdraw has been received from the rearguard commander.
  - (2). Acknowledge the signal by a salute or otherwise and repeat it as received.
  - (3). Having received the signal, never retire until he sees that the piquet nearest to the enemy has got clear.
  - (4). Failing the receipt of orders to withdraw, never evacuate his position until the rearguard flag is at least abreast of his post.

When the rearguard commander gives the signal to withdraw he means that he is ready to cover and receive the piquet and that it may come down as soon as it is ready to do so.

The piquet commander must then hold on as long, after he receives this signal, as he may consider necessary to cover any neighbouring piquet, but no longer.

In the actual withdrawal the following points require special

**The withdrawal.** attention:—



**Frontier Mountain Warfare.**

(a). Every effort should be made to get all men away without letting the enemy see that the position is being vacated unless adequately covered by fire from other troops.

On occasion it may even be an advantage to let the enemy see that a piquet position is being vacated when, for instance, it will afford him little cover from a covering fire which has been so arranged as to take him unawares.

(b.) If this has not already been done in preparation on seeing the approach of the rearguard flag, about half the strength of the piquet may be sent down to take up a covering position lower down the hill.

This covering position should be as far down as possible although within close range, say from 400 to 600 yards.

Weakly men should always be sent away first.

(c). When the covering party is in position the remainder of the piquet should retire at top speed passing through or round the covering party to take up another covering position still further down the hill.

The piquet should keep on retiring thus, each party moving at racing speed, until the rearguard is reached.

Any covering position in the plain or valley should be well away from the foot of the hills so as to facilitate overhead covering fire.

(d). Throughout the withdrawal parties should stick to spurs and salients avoiding all nullahs and re-entrants.

(e). In the event of casualties occurring the withdrawal must immediately be stopped and a counter-attack made if necessary.

Casualties must be got away at all costs.

(f). On reaching the Rearguard the piquet commander



must report immediately to the Rearguard Commander naming his regiment and the number and strength of his piquet.

A similar report should be made to the Company Commander, if present, and the "chit" given to him.

Piqueting tickets or "chits" are collected by the Company Commander who, in his turn, reports to the Rearguard Commander, thus affording a double check on the withdrawal of all piquets.

Colonel Callwell has given us several pages of invaluable material dealing with the subject of this article and showing more clearly than the present author can ever hope to do what are the difficulties to be met with in rearguards and retirements and how these difficulties should or should not be met (1).

**Examples.**

We must however remember that our accepted tactics and system of training in Mountain Warfare have been evolved mainly from the experiences of 1897-98 and that the troops then employed had not the theoretical advantages that we now enjoy as a result of their labours and trials.

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**VI. The Attack.**

In considering the question of attack in this form of warfare it is first necessary to refer to Infantry Training 1914, Chapter X, "Infantry in Attack" and to consider to what extent and in what particular way we can apply the principles therein laid down for our guidance.

**References.**

At the same time we must not lose sight of what we are taught in Field Service Regulations Part I, Chapter X, "Warfare against an uncivilized enemy."

The distribution of an attacking force in frontier warfare usually follows to some extent the lines laid down in Infantry Training 1914, Section 121-i, but the General Reserve is usually smaller

**Distribution.**

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(1). Small Wars p. 324-345.



than in warfare against a civilized enemy, a larger proportion of the available troops is committed at the outset and the actual attack is usually directed against the enemy's front and flank.

The procedure is well described by Colonel Callwell in dealing with the tactics of attack and Hill Warfare (1).

The essentials may be taken to be:—

- (a). To make a good bag.
- (b). To turn the enemy flanks unseen.
- (c). Frontal assault must not be premature.
- (d). An adequate reserve kept in hand.
- (e). Guns must not be used prematurely.

In order to ensure a good bag it is necessary, not only to defeat the enemy and to turn him out of his position, but if possible he must be caught under effective fire in retreat. To secure this condition the flank attack must try to get into position unseen and the frontal attack must not be so premature as to drive the enemy out of his position before the flank attack is ready to co-operate. And if the guns are used too soon the enemy may be driven out of his position before either the frontal or the flank attack is in a position to get to grips with him.

The two attacks on the Dargai position in 1897 are useful examples of the points the author wishes to emphasise. In the first of these attacks a flank movement was actually initiated. The enemy was on the look-out for it. The frontal attack was premature and the enemy evacuated the position in time to avoid loss. The second attack on the same position was purely frontal although reports of a flank attack were circulated with success in that a large enemy contingent was kept detached to meet it. The frontal attack was only successful after suffering heavy casualties, but it severely punished the enemy (2).

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(1). *Small Wars* p. p. 160, 161 and 304.

(2). *Frontier and Overseas Expeditions from India*. Vol. II. p. p. 78 etc.



In the attack on the Malakand Pass in 1895 (1) the flank attack is said to have been delayed, but the bag was eminently satisfactory and was perhaps all the greater for the delay.

Infantry Training 1914, Section 121-4, is to some extent inapplicable in frontier warfare owing to  
**Reconnaissance.** the nature of our enemy and of the ground.

Previous reconnaissance, except in the nature of reconnaissance in force, is often impossible and not so necessary as in dealing with a civilized enemy. Reconnaissance takes time and may mean considerable delay during which the enemy can collect in larger numbers.

Owing to our superior armament, discipline and organization, we are generally in a position to take greater risks than would be justified against a better organized enemy.

In studying accounts of frontier expeditions we find several examples of successful reconnaissances, nearly always in force, sometimes attended with considerable casualties in the withdrawal, where an immediate attack would probably have been equally successful without the reconnaissance.

The first action of Dargai already referred to and the reconnaissance at Saran Sai (2) both serve to illustrate the author's meaning.

The importance of trying to close with the enemy in  
**Closing with enemy.** frontier warfare is just as great as in any other kind of offensive, but the difficulty of doing so is increased by his superior activity and by his reluctance to await the approach of an assault.

This is a subject upon which the author has laid great  
**Covering fire.** stress throughout his previous articles as being applicable to all operations of frontier warfare. The importance of covering fire in the attack is just as great as elsewhere.

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(1). Nevill p.p. 190-192. *Frontier and Overseas Expeditions* Vol. I p.p. 528-530.

(2). *Frontier and Overseas Expeditions* Vol. II. p. p. 89-91.



## **Frontier Mountain Warfare.**

An attack presupposes the enemy's intention to stand and under such circumstances well-disposed covering and cross fire alone will often enable bodies of infantry to advance from position to position which is a necessary preliminary to coming to grips with the enemy.

At the same time, from the nature of the ground that we usually have to operate on, the opportunities for covering fire are greater than in warfare in the plains.

In frontier warfare it is often more than ordinarily difficult to locate our enemy or the direction from which shots are coming and therefore to determine on what points covering fire should be directed. In such cases officers and non-commissioned officers commanding fire units have to be prepared to keep up a covering fire on crests, skylines, etc.

The use of entrenching tools in the attack in frontier warfare is hardly ever necessary or desirable, although the principles laid down in Infantry Training Section 121-9 must be observed.

### **Entrenching.**

In this form of warfare natural cover is so frequently available and the nature of our enemy is such that resolution in the advance from position to position supported by covering fire is little likely to fail, so that precautions against possible failure are not of such great importance as in warfare against a civilized and well organized enemy.

Where ground is so variable as it is on and beyond our north-west frontier advances by means of rushes (Infantry Training Section 121-12) are not as a rule necessary but the methods employed to gain ground must not lack elasticity and a variety of methods may have to be employed during quite a short advance.

### **Rushes.**

In carrying out an attack in broken hills, once units such as companies and platoons are committed to a particular task, lesser commanders will frequently find themselves thrown on their own resources. Communication with other sub-units may become impossible

### **Communication.**



and the receipt or issue of orders may be out of the question.

It is then all the more important to ensure from the outset that all ranks thoroughly understand what they and others are expected to do before moving off to the attack.

A battalion must expect to be broken up and companies to be separated in the attack, which will often resolve itself into a number of minor and more or less isolated operations such as that so ably conducted by Lieutenants Lucas and Bruce with their Gurkha Scouts in 1897 (1).

As pointed out above under the head of "Distribution," the use of reserves is governed by somewhat different conditions in frontier mountain warfare than elsewhere.

**Reserves.**

From the nature of the ground reserves if kept well back probably could not be brought up in time to assist in a successful assault.

From the nature of our enemy and his armament and organization, as compared with our own, large reserves are not necessary.

Lumsden tells us that our best troops should be in reserve (2), but he says nothing about their strength. Colonel Callwell tells us that reserves in hill warfare should be close up and that they might be about three-eighths of the total attacking force. Apparently it is sound to keep a small reserve in hand composed of reliable troops to confirm success or to cover failure in attack.

In the case of a battalion attacking, one company, or six platoons, might be thus employed.

We have already, to some extent, examined the question of formations for smaller units in attack as for instance in the case of a platoon advancing to a piquet position.

**Formation.**

Otherwise, in this form of warfare, formations are governed

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(1). Small Wars p. 305.

(2). Lumsden p. 312.



## **Frontier Mountain Warfare.**

so much by the broken nature of the ground and the necessity for avoiding re-entrants that it is impossible to lay down any rules. Just as the ground is more irregular than elsewhere so formations vary more than in other forms of warfare. It is however well to remember that depth is not nearly so necessary as in dealing with a civilized enemy and that formations for protection from artillery fire are not required.

As a rule so little flat ground is found that a battalion preparing for attack would be collected in mass under cover; covering fire would be developed from suitable positions whilst small units, such as a company or platoon, are pushed forward to secure further tactical points from which subsequent advances can be covered.

In Frontier Mountain Warfare the "fire fight" referred to in Infantry Training Section 121-7 is not such a serious affair as in civilized warfare owing to the fact that we almost invariably possess fire superiority from the outset. But the principles involved are the same.

From this fire superiority, developed from covering positions, we are enabled to advance to fresh covering positions or to the assault. This process is more rapid than in attacks against a better organized enemy and an attack is seldom a very long drawn-out operation except in so far as delay may be caused by the difficult nature of the ground and the enemy's truly marvellous use of cover.

As in civilized warfare, it is of importance that troops committed to the attack should be well supplied with ammunition before moving off.

It is seldom possible to keep ammunition mules anywhere near the firing line, and touch with them is easily lost when fighting up hill.

At the same time, owing to topographical difficulties, supports cannot always be in a position to supply more advanced bodies with extra ammunition at short notice.

Thus an extra 50 rounds or so should be issued to each



man before an attack starts; ammunition carriers acting as baggage guards with section reserves must be ready to move forward with supporting units and to carry up extra ammunition; and the ammunition of men who become casualties and are sent back to aid posts should be collected and distributed.

Previous remarks on this subject may appear to have laid too much stress on the need of covering fire to assist advance or to prevent casualties.

**Covering fire.**

In attack there is another, and perhaps a more important, use for covering fire, namely to punish the enemy as much as possible, to hold him to his cover whilst other portions of the attacking force can get to close quarters and, in their turn, punish him with their fire when he gives way.

The object of this covering fire is thus, not to drive him from his position, but to pin him to it until the threat of assault or the assault itself, drives him from it to be further punished by close and accurate rifle fire.

This question of the best use of covering fire in the attack leads us at once to consideration as to how to get the best results from our artillery.

**Artillery.**

In the advance the fire of the guns must only be used when it becomes necessary to enable the infantry to reach its objectives and subsequently, when the enemy has been turned out of his positions, to do as much damage as possible during his retreat (1).

The kind of enemy we are now concerned with seldom or never waits for the assault.

**The Assault.**

But this is no reason for neglecting sound precautions or despising our enemy.

An assault should invariably be covered by some rifle fire, even though it may be by only a few rifles.

Hilly ground will nearly always offer suitable positions for this.

It is important that the assault should not be premature

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(1). *Small Wars* p. 307 etc.



## **Frontier Mountain Warfare.**

and so lose its *elan* before the enemy's position is reached.

If an assault is started too far from the enemy's sangars the attackers get winded and are good for nothing with either rifle or bayonet just at the moment when they are most likely to want all their best powers to meet a counter-rush or to shoot straight and rapidly at the best target they are ever likely to get, an enemy running away down hill.

The pursuit in frontier mountain warfare is generally more by means of fire than by actually following the enemy.

**Pursuit.**

A notable exception is when the ground happens to be suitable to the action of cavalry, the dream of the cavalry officer. Such opportunities are rare and form red-letter days in the annals of frontier warfare. The Swat Valley has witnessed more than one such affair, *viz.* in 1895 and 1897 (1).

In the ordinary pursuit after a successful assault the infantry should at once seize positions from which fire can be brought to bear on the retreating enemy.

Where fresh infantry may be available as in the case of a reserve that has been kept well up and not actually used in the attack, they should be pushed forward quickly and energetically. Any available artillery, especially mountain-guns, should advance rapidly, and every endeavour should be made to shoot down as many of the enemy as possible.

### **VII. Raids and Counter-raids.**

The study of raids in frontier mountain warfare is not a subject which will, in itself, afford us much direct value as to our own training for this class of warfare.

**Explanation.**

But since the study of our enemy and of his characteristics and methods is of such great importance in all war, and since our enemy in this case is so partial to raids, we may, by studying such raids, acquire considerable insight into

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(1). Frontier and Overseas Expeditions, Vol. I. p. p. 375-377. Nevill p. 252.



the mind of our enemy; an insight which must prove a great asset in coping with him on his own ground.

The above considerations are apart from the fact that this study is so interesting as to whet our appetite for more knowledge on the subject of our north-west frontier and of the tribes that dwell across it.

Raids are of two kinds. First there is the raid by our enemy, one of the favourite forms of warfare with the Pathans on our borders. These are referred to hereafter as "Raids" simply. Secondly there is the raid carried out by our troops as a form of reprisal against our enemy. These will be referred to as "Counter-raids", not being a favourite form of warfare with us and savouring as they do rather too much of "jackal tactics," to be much in favour with the soldiers of a great Empire.

Colonel Callwell says that our objection to counter-raids is one of principle(1). It certainly does seem that a warfare of counter-raids as a means of subduing an uncivilized enemy is somewhat *infra dig.* for a State such as ours.

A Pathan raid generally takes the form of a sudden, secret  
**Raids.** descent by night against a particular village selected because of its wealth, proximity to the frontier and other considerations.

Such raids are usually carried out by small parties of daring spirits, refugees from British justice, the adventurous youths of the local tribes and so on. But raids are by no means confined to mere burglaries under arms such as these, or even to sudden dashes into British territory under cover of darkness. In some cases the tribesmen have not hesitated to advance in broad daylight and in large numbers to attack and loot some prominent town or village within our territory. On the Mahsud Wazir frontier in 1860 the Mahsuds came down some 3,000 strong to sack the town of Tank which stands well down in the plains some five miles from the foot of the hills (2).

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(1.) Small Wars p. 146, 245.

(2.) Frontier and Overseas Expeditions Vol. II, p. p. 366, 367.



## **Frontier Mountain Warfare.**

Another striking instance of a somewhat similar attempt was the sudden advance of some 3,000 to 4,000 Bunerwals against Rustum in August 1915. On this occasion the tribesmen were promptly attacked and driven back into the hills by a mixed force of not more than 300 or 400 men, but the ground was such that the cavalry were condemned to remain mere spectators.

It is impossible to know where exactly to fix the limit between an attack and a raid in the case of the trans-border Pathan. The difference between the two would appear to lie in the intention of the enemy, whether to attack, loot and continue his advance, or to loot and return home before British forces can arrive on the spot to deal with him.

The larger form of raid to which we have here referred is so nearly akin to an attack proper that it would be superfluous to examine the details of how such an affair is usually conducted even were there, which is not usually the case, any sign of sufficient forethought or organization to repay examination.

At its best, too, such a large raid can be but a magnified example of a small one.

We will confine ourselves, therefore, to considering the conduct of a small raid such as might be considered a "sealed pattern" by the Pathan expert.

### **Small raids.**

As a preliminary the leading spirit in such an enterprise is particularly careful to keep his own counsel and to divulge his plans only at the last moment and to the few intimate scoundreds on whom he knows he can depend. Preliminary enquiries and reconnaissance are a necessary part of the game.

Having selected an objective such as a rich Hindu bunniah, or a village known to be well supplied with the good things of this world and not too far from the frontier, and having made himself well-acquainted with the best line of approach thereto, our friend the outlaw or raider will choose a good dark night to set out on his venture.



Raiders are particularly clever at disseminating false information as to their plans for the benefit of political spies. The latter are frequently well-known across the border and not uncommonly act for both sides.

If there is a Government fort or border post in the vicinity of their objective, raiders will often detach a party to watch the garrison.

The party of raiders will perhaps lie up during the early part of the night in a convenient nullah with small piquets posted for their own protection in quite the orthodox style. Here they may be joined by one or more friends from British territory who will be only too pleased at the prospect of looting the very bunniah to whom they perhaps owe more than they will ever be able to repay.

The advance will be made down a nullah or other covered approach and piquets posted to guard the subsequent withdrawal.

On nearing the objective scouts or piquets are sent off to report all clear and to secure all commanding points from which danger may be apprehended during the progress of the raid.

These raiders frequently do not hesitate to kill, or torture their victims in order to elicit requisite information as to where valuables are concealed. Sometimes they will forcibly kidnap men, women and children and hold them to ransom until their demands have been satisfied.

A raid may also take the form of a sudden descent by armed

**Raids on cattle.**

men on the flocks and herds of British subjects; this might be carried out early in the morning to allow time for getting captures well away over the frontier, especially where Government troops or militia are known to be distant; or late in the afternoon so as to take advantage of darkness to cover the movements of the raiders.

In either case provision is usually made to secure the withdrawal by leaving small piquets on the line of retirement, and the actual rounding up and driving off of cattle, sheep and goats,



camels, etc. is further covered by parties detailed for the purpose.

If, however, any pursuing troops do come within sight of the raiders they almost invariably leave their captures and make good their escape without fighting.

Sometimes raiding will go on persistently on some particular part of the frontier but directly a detachment of troops is sent out the raiding will cease only to begin again when the detachment is withdrawn, or the intending raiders will spread about a false report as to their own intentions and if this is acted upon they will promptly carry out a raid in some totally different direction from that in which their false information has drawn the troops.

There is a well known instance of how a militia officer was deceived by a notorious Wazir raider. **Example.** A report had been received of the theft of some sheep and goats by raiders and the officer set out with a party of his men to seize a defile through which it was hoped the raiders might attempt to escape. The party reached the defile in good time and disposed itself so as to make the best use of the ground in the event of the appearance of the raiders. After a considerable lapse of time there appeared a flock of sheep attended by two or three shepherds who denied having seen any signs of raiders and so were allowed to continue grazing their flock until nearly out of sight beyond the defile. Then the unwary militiamen were astonished to find themselves fired on by the pseudo-shepherds and their concealed comrades who were by now almost beyond reach of pursuit and certainly had the laugh of their pursuers.

It will be evident from what has been said above that the prevention of raids must be a matter of great difficulty and the capture or punishment of raiders often well-nigh impossible. **Prevention.** When a party of raiders has been successfully caught, rounded up or severely handled, it has generally been more by good luck than good management.

Such good luck may come to him who waits but the waiting must be accompanied by constant vigilance and activity so



that raiders will never know when or where they may not find a lurking party of watchful troops.

The latter must be constantly springing surprises on their natural enemy the raider, practising every trick to deceive and evade his spies, and ready and willing to move fast and far at any hour of the day or night.

But before entering further into the subject of counter-measures we would refer our readers to one

**References.**

or two examples of raids which should prove of interest (1). There is, unfortunately, no material available from which the ordinary reader can study in detail the methods employed by the tribesmen in these examples. For these access would be necessary to detailed political and military intelligence reports.

The Mahsud Wazirs are looked upon as the most daring

**Mahsuds.**

and accomplished raiders on our north-west frontier.

The history of our dealings with this tribe is one long record of raids and outrages ranging from the kidnapping of a child to be held to ransom or the murder of an inoffending Hindu trader to attacks in force against towns within our border. And it is in a study of our counter-measures that we hope to find some interesting material for the latter part of this article.

Before going into the subject of "Counter-raids" or raids

**Counter-measures.**

carried out by British forces as reprisals, the question of preventive and other measures to counteract enemy raids is worthy of consideration. First and foremost, as in all dealings with uncivilized enemies, punishment is the best preventive. But punishment may take a variety of forms. The first requisite in dealing with raids is information as to intended raids to enable us to prevent them by meeting the raiders; to so dispose our forces as to make raiding too dangerous for the raiders or to intercept the withdrawal of the raiders

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(1.) Nevill p. p. 327, 328.

Wylly p. p. 453, 454.



and punish them so severely as to dissuade them from further such efforts.

We have already referred to informers, or spies and their employment.

The subject of the methods sometimes employed by political and other subordinates to entrap raiders, outlaws etc, is so unsavoury that the less we have to do with it the better. The use of spies is an unfortunate necessity in all warfare.

One of the most effectual ways of preventing raids is by the establishment of a chain of outposts, or small forts, blockhouses, etc., garrisoned by regulars, militia or police, and so disposed as to cover all the main lines of approach from tribal territory.

If such posts are suitably connected by telegraph, telephone, signallers, etc., and their garrisons strong enough to spare men for the purpose; and provided information is good raiders may be met before a raid, or intercepted on their return from one, and held up until sufficient force can be accumulated to kill or capture them.

Sometimes, under arrangements made by local political officers, villages within our border are provided with arms to enable them to deal with raiders. This system partakes of the nature of a two-edged sword being as liable to hurt its user as his enemy. The very weapons provided by us are a lure to the tribesman, and the Pathan within our border is not always above taking a share in looting his wealthier neighbour. Yet there have been many instances of gallant affairs in which villagers within our border have proved a hornet's nest to would-be raiders. In fact a few resolute men ready at all times to put up a good fight for their own lives and property will generally secure immunity for their own village as far as ordinary raids are concerned.

Small moveable columns provided with pack transport posted at important points along the border are often a very effectual preventive of



raiding, but they are expensive and of merely temporary value. Unless their information is exceptionally good they may never succeed in getting within rifle range of a raider; raids may even go on all round them and, in any case, will recommence directly they are withdrawn.

Also, such a system, is most harassing to the troops employed who are kept on the move in all weathers with no compensating advantages.

Finally, before actually considering counter-raids, we come

**Blockades.** to the blockade.

This is a purely political measure in which police, aided perhaps by militia and regulars, are employed to stop all intercourse between the offending tribe and British territory. In this way the headmen of a tribe may be induced to exert their influence to prevent raids, to punish or to give up raiders or to pay up fines for past offences. Owing to the democratic nature of the Pathan and the fact that no man has much influence over his neighbour, except that produced by the rifle or the rupee, a blockade is seldom quite effectual unless backed up by other and more damaging methods.

Recent events on the Mohmand border, where raiding had become for a time nearly as chronic as on the Mahsud-Wazir frontier, have furnished a striking example of what may well be considered a model, up-to-date blockade with all modern improvements such as aeroplanes, barbed wire, live wire, strong points, etc. In this case there is no doubt that a little modern thoroughness has proved as effectual as some blockades in the past have proved the reverse.

Another very useful counter-measure and one that is sometimes combined with a blockade is what

**Baramtas.**

is known as a "Baramta" or "rounding up."

A certain area or collection of villages within our border which may be known to harbour raiders or their sympathisers is unexpectedly surrounded by police, troops, etc., moving if necessary under cover of darkness.



Then every able-bodied man, every head of cattle, horse, pony, etc., every member of the trans-border tribe concerned and so on is rounded up and kept a prisoner for as long as may be necessary to verify suspicions or secure those of doubtful loyalty.

One such *Baramta* carried out on the Waziristan border some years ago by a well-known political officer was so effective that it will be remembered for generations as a warning to the evil-doer and an example to such as may need to employ similar methods thereafter.

This at once brings us to the "Counter-raid," which is the main subject of this article. The whole history of our dealings with the frontier tribes goes to prove that the one great and most effectual way of checking the Pathan's natural inclination to rapine and plunder is to kill him and to destroy or remove his property.

The fact that every really successful expedition has been followed by a lengthy period of freedom from raids by the tribes concerned is sufficient proof of this.

Now the counter-raid is nothing more or less than a small and rapid expedition and only differs from the ordinary expedition in the fact that it is immediately followed by a withdrawal and is not an expensive venture for the Government.

If a counter-raid is to be a real success certain conditions must be secured.

Some of the essentials are:—

- (a) Secrecy.
- (b) Surprise.
- (c) Mobility.

Each essential is largely dependent on the others. Thus without secrecy in preparation surprise will be impossible. And without mobility, or the ability to move at once and rapidly, both secrecy and surprise will equally prove impossible.

Preparations for carrying out a counter-raid must be secret



as otherwise the tribe or section concerned will have time to collect to oppose the movement. They may discover the proposed line of advance and be enabled to concert measures for defending whatever passes are to be crossed and in any case the success of the operation must be jeopardized and casualties increased. In other words surprise, the value of which is acknowledged in all warfare, is dependent on secrecy. We have seen that in order to secure the benefits of surprise we must have secrecy. But without mobility neither secrecy nor surprise can be relied upon. The preparations for a counter-raid and the actual start may be kept secret from the enemy and so the foundations of surprise may be secured. But without rapidity of movement a watchful enemy, ever on the alert against surprise, will be nearly certain to discover what is afoot in time to secure himself to some extent against the consequence of our counter-raid.

Without previous preparation it is impossible to secure mobility so that if it is not provided for in peace time the necessary movements of troops and transport just before carrying out a counter-raid must tend to some extent to give the show away.

If, in peace time, troops in garrison close to the frontier are not provided with sufficient transport to ensure mobility their value as frontier troops is at a discount. Then, when the necessity does arise, time will be wasted; secrecy will be rendered impossible and surprise will be out of the question owing to the bustle and excitement of collecting transport, etc.

Now supposing that our three main essentials have been provided for as far as possible in previous preparation; that secrecy has been maintained; surprise duly considered and mobility secured in sufficiency of good transport, fitness of troops and so on; we are then ready to get to work.

The next thing is to have selected the objective of our counter-raid.

This must be a village or something of the sort within a



## **Frontier Mountain Warfare.**

reasonable distance of the frontier and such that an attack on it will give the maximum of results, enabling the troops to get back to their camp or cantonments within 48 hours or so, or at least before the tribesmen can collect in sufficient numbers to make the withdrawal a very serious affair. If in addition simultaneous counter-raids can be made at other points and by other columns the surprise and success of the whole operation will be all the more complete. The advance to the objective must be as secret and as rapid as possible. For this reason cavalry, fully trained in infantry duties, or infantry mounted and able to ride long distances are invaluable on the frontier. Night marching, especially where much of the ground to be covered is within our own border, is also of great value.

Every detail of the intended operation must be most carefully thought out and explained to all concerned in good time so that every individual may know what he is expected to do himself and what others will be doing.

When the objective is actually reached, which should be at or before dawn if possible, not only must the line of withdrawal be secured by holding heights in rear but all heights commanding the village, or whatever the objective may be, must be secured. Whatever the work to be done, burning a village, collecting cattle, destroying crops, arresting headmen etc., it must be carried out quickly and unhesitatingly.

The withdrawal, probably the most difficult part of the whole operation, must then be carried out rapidly and on the lines of retirements in hill warfare in general such as we have studied above. But the withdrawal should never be begun until all captures, prisoners, cattle, etc., have been got well away under escort.

Finally one or two examples of counter-raids will be of interest.



In 1878 two very successful counter-raids were carried out against the Usman Khels from Mardan (1).

Later again, in 1901-02, during the course of the blockade against the Mahsud-Wazirs a whole series of counter-raids were carried out by comparatively large columns and met with conspicuous success (2).

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(1) **Frontier and Overseas Expeditions Vol I, p.p. 407-412**

(2) **Frontier and Overseas Expeditions Vol. II, pp. 440-445.**



## **CORRESPONDENCE.**

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STAFF SCHOOL:

*Mhow, 19th February 1917.*

SIR,

It has been brought to my notice that there is a discrepancy between the text of General Smut's dispatch published in the Gazette of India of 19th August 1916 and my lecture on the campaign in East Africa which appeared in your issue of the 1st January 1917.

The following passages appear in my lecture:—

A. "The 1st Division X X X was to concentrate at Longido and advance thence between Kilimanjaro and Meru with the object of striking the Tanga-Moshi Railway about Kahe, thus cutting off the retreat of the enemy from Moshi".

B. "General Stewart's force (1st Division) X X X did not reach the latter place (Boma ya Ngombe) till the 13th, and thus was too late to cut off the enemy in their retreat from Taveta and Moshi by moving on Kahe as had been intended".

These passages might be taken to imply that the objective named for the march of General Stewart's force was Kahe, and that he failed to reach his objective. The following extract from General Smut's dispatch shows that this was not the case.

C. "The task of the 1st Division was to XXX advance between Meru and Kilimanjaro to Boma ya Ngombe. My intention was thereafter to direct this division on Kahe and cut the enemy's line of communications by the Usambara railway".

I trust that you will see your way to publish this explanation in your next number with a view to correcting the false impression inadvertently conveyed in my lecture.

Your Obedient Servant,

F. S. KEEN, LIEUT.-COL.

THE SECRETARY,

United Service Institution of India, Simla.



# **QUARTERLY SUMMARY OF MILITARY NEWS AND ITEMS OF INTEREST.**

## **ARMY HEADQUARTERS.**

**1935 Dress—Wearing of Uniform by Retired Officers and Ex-Officers.**—The following Army Council Instruction is republished for the information of all concerned:—

**I. A. O.  
20th February 1917.**

### **ARMY COUNCIL INSTRUCTION.**

**No. 2353 OF 1916.**

#### **2353. Wearing of uniform by Retired Officers and Ex-Officers.**

1. It is notified for information that the general permission granted under regulations to officers who have retired from the Regular Army, to officers of the Reserve of Officers and to officers of the Special Reserve, and the permission granted by notification in the London Gazette to ex-officers of the Reserve of Officers, Militia, Special Reserve, Yeomanry, Volunteer and Territorial Forces to wear uniform at discretion are in abeyance during the continuance of the war. Until further orders, such officers and ex-officers will only be permitted to wear uniform when employed in a military capacity or on ceremonial occasions of a military nature.

2. Whenever uniform is worn by these officers, the distinguishing letters "R.," "M. R.," "V. R." or "T. R." as the case may be, will always be worn on the collar of the service dress jacket, below the collar badges if the latter are worn.

3. The wearing of uniform by officers of the Unattached List, T. F., officers of the T. F. Reserve and by Cadet officers is governed by A.C.Is. 787 and 1401 of 1916.

4. The above restriction also applies to those warrant officers to whom special permission to wear uniform after discharge has been given, and to ex-N.C.Os. of the late Volunteer Force and of the T. F. who have been granted permission to wear uniform after discharge under the Volunteer Regulations and under the Territorial Force Regulations

5. Paras. 1 and 2 do not apply to those retired officers who have been recalled to and are still serving on the active list.

9/4/562 (Q. M. G., -7).



The above order applies *mutatis mutandis* to all retired officers of the Indian Army, and is now made applicable to all retired, regular, territorial and volunteer officers residing in British India. Paragraph 237, Army Regulations, India, Volume VII, and paragraph 27, Army Regulations, India, Volume IX, will accordingly be held in abeyance for the period of the war.

**I. A. O.**  
**29th January 1917.**

**137. Organization.**—1. With reference to India Army Orders:—

No. 204, dated 11th May 1917,

No. 167, dated 12th April 1915,

No. 423, dated 19th June 1916,

the following re-organization of Commands is approved as a temporary measure during the war:—

(a) The Northern Army command, with Headquarters at Rawal Pindi will comprise the troops located within the areas of the 1st, 2nd, 3rd and 7th Divisional boundaries, and the 3 Frontier Brigades.

To take effect now.

(b) The Southern Army command, with Headquarters at Poona, will comprise the troops located within the areas of the 5th, 6th, 9th Divisional boundaries and the Bombay and Karachi Brigades.

To take effect from the date of the appointment of the Army Commander.

(c) The remaining Divisions and formations under the Command of His Excellency the Commander-in-Chief will be directly under Army Headquarters.

To take effect now.

2. The duties of Army Commanders will be as laid down in India Army Order No. 204, dated 11th May 1907, as amended by India Army Order No. 423, dated 19th June 1916. To enable them to carry out their duties effectively and in particular to observe and inspect more closely and constantly the work of the Administrative Services, thus ensuring that subordinate commanders fully exercise the powers delegated to them by His Excellency the Commander-in-Chief, the



staff of the Northern and Southern Armies will be composed as follows:—

*Personal Staff.*

- 1 Assistant Military Secretary.
- 1 Aide-de-Camp (British).
- 1 Aide-de-Camp (Indian).

*General Staff.*

- 1 Brigadier General.
- 1 General Staff Officer, 2nd Grade.
- 1 General Staff Officer, 3rd Grade.

*Administrative Staff.*

- 1 General Officer (Major-General or Brigadier General).
- 1 Deputy Assistant Adjutant General and Quartermaster-General.
- 1 Staff Captain.

*Attached.*

- 1 Chief Engineer.
- 1 Staff Officer, Royal Engineers.
- 1 Inspector of Musketry and Machine Guns.
- 1 Inspector of Physical Training.
- 1 Inspector of Supply and Transport Services.
- 1 Deputy Assistant Director of Medical Services.
- 1 Deputy Judge Advocate General.

3. The details of the clerical and menial establishments authorised for the staff of each army will be notified hereafter.

4. The financial powers of Army and Divisional Commanders will be promulgated separately.

5. General Officers Commanding Divisions will continue to correspond with Army Headquarters as directed in paragraph 3 of India Army Order No. 240, dated 11th May 1907.

**War Leave—Officers.**—In supersession of all India Army Orders

**I. A. O.  
10th March 1917.**

which have issued from time to time during the War on the subject of leave to British Officers of the British and Indian services, serving regimentally or on the staff, or with departments and services, the following revised rules will be introduced with effect from the date of publication of this order:—

- (i) Leave, to be termed "War leave" and which is in substitution for privilege leave, will be granted in accord-



**Quarterly Summary of Military News.**

ance with the rules for privilege leave contained in Army Regulations, India, Volume II, the existing rules in which for the grant of district or temporary, and recreation leave, will stand, but this leave will not be taken in combination with War leave.

(ii) War leave will not exceed 60 days in any case and may only be granted during the leave season, *i. e.*, between the 1st April and 15th October.

(iii) All officers must be within 60 hours of recall when on War leave, [but see clause (iv)] and 12 hours of recall if on district or temporary and recreation leave.

(iv) Officers of the garrisons of Fort Sandeman, Loralai and Port Blair will not be allowed more than 60 days' War leave, but for the purposes of recall, officers stationed at Fort Sandeman and Loralai are permitted to reckon the number of hours from Harnai railway station, and officers at Port Blair may reckon the time from the port of disembarkation in India or Burma.

2. Leave is to be given solely with the object of keeping officers in a fit state of health and for purposes of recuperation.

3. The authority for the grant of leave is delegated to those officers who are responsible for training and for the maintenance of units and services in a proper state of efficiency, and for maintenance of security and defence of their areas. For War leave, the General Officer Commanding the Division, Divisional Area or Independent Brigade will be the authority. For district or recreation leave, as laid down in Army Regulations, India, Volume II, paragraphs 224 and 225.

4. The number of officers who may be absent at the same time will be fixed by the General Officer Commanding the Division, Divisional Area or Independent Brigade.

5. Any leave granted under these rules will not count against an officer's claim to accumulated privilege leave hereafter, *vide* paragraph 221, Army Regulations, India, Volume II.



## REVIEWS OF BOOKS.

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*The Book of the Machine Gun; by Major F. V. Longstaff and A. H. Atteridge, London; Hugh Rees, Ltd. Diagrams and Photographs.*

Major Longstaff and A. H. Atteridge have in the production of *The Book of the Machine Gun* made good a want in English Military Libraries that was not creditable to our Military writers.

The authors have had the advantage of the help and advice of most of the machine gun experts of both the old and new world, including the Director of the French Machine Gun School at Vincennes and the Secretary of the U. S. A. General Staff. The result is a book of extraordinary value, not only to machine gunners but to every officer and civilian who follows the course of the present Armageddon; it is not too much to say that every page, from the preface to the last of the beautiful photographs and drawings at the end of the book, is full of interest.

The authors first give a history of machine gun, going back to the time of the Renaissance. It may be noted that Major Forbey was employed by the Indian Government in 1868 to report on a machine gun similar to one the French were arming themselves with, and which, he states, could fire 444 shots a minute.

The bad machine gun tactics adopted by the French and the retrograde effect they had on machine gunnery are clearly shown. For the rediscovery of the machine gun, after the 1870 fiasco, we have to thank the Royal Navy, the Germans, and our own War Office for information which greatly helped and converted the machine gun despising Boche. After the battle of Ulundi Lord Chelmsford gives a correct view of the handling of machine guns, but which at that time was considered revolutionary.

Under the heading "The Evolution of Machine Gun tactics", considerable space is given to the writings of Lieutenant Parker, United States Army, one of the most brilliant thinkers and prophets of Machine Gunnery, but young machine gunners should not be carried away by his enthusiasm. In Chapter VII "Machine Guns in the German and Austro-Hungarian Armies", the authors show the tremendous development carried out by the German General Staff in



arming their troops with machine guns, once they had obtained the foundation for their ideas from the British. The pages, showing the amount of ammunition supplied by the German Government for practice, will not be popular with our budget-makers. The chapter on the tactics of the machine gun is sound and far reaching, but it is to be hoped that in the next editions the authors will go further into the employment of barrages, locking the front, and cross-fire.

The remarks on the "Reserve of Machine Guns" do not lay sufficient stress on the point that machine guns are divided into supports and reserve, as well as those pushed forward. But no one, machine gunner or otherwise, can read this excellent chapter without learning something and improving his knowledge of machine gun tactics. The teaching of "Training" is clever, scientific and ambitious. After an unusually interesting Appendix I, the book closes with a large number of remarkable photographs and drawings, showing the development of the machine gun in various armies.

The authors are to be congratulated on their excellent work, and it is to be hoped that they will keep *The Book of the Machine Gun* up to date in each succeeding edition as machine gunnery and tactics expand and develop.

---

*Naval and Military Geography of the British Empire;*  
by Vaughan Cornish, D. Sc.; London, Hugh Rees, Ltd. Price  
3s. 6d.

This is a short and concise review of the chief facts connected with the strategic geography of the Empire. It is the result of a series of lectures which the author, a well known geographical authority, delivered under government auspices at various naval and military centres since the war began.

The facts relating to military geography fall logically under three main heads. First, the areas from which naval and military resources are obtained; second, the routes along which armed forces and their supplies are moved; third, the positions where these movements can best be stopped.

The chief sea and land routes are outlined, and their strength and weakness pointed out.

There is a short but instructive chapter on India. Here we have either the sea or difficult mountain barriers cutting us off from the rest



of Asia, except on one side where inhospitable deserts take the place of mountains.

Yet there was, before the war, a school which advocated the bridging of this latter military obstacle by railways linking us with the European system. It is to be hoped that the lessons of the present war will bring about a change of views on this subject. We have seen enough of modern rail power to show that it would not be to our advantage, from a military point of view, to bring it into active competition with sea power, which the submarine has already deprived of much of its force. At the same time it cannot be denied that the railway question is one fraught with many difficulties.

The book is admirably illustrated by numerous maps showing the various routes which come under discussion. Owing to its scattered nature the British Empire can only be shown on a map which embraces the whole world.

It is not possible to represent a sphere on a flat surface without considerable distortion, giving very wrong ideas of the shape and size of those countries which lie away from the equator. For this reason it is strongly recommended that military geography be studied with the help of a small globe of, say, 8 inches in diameter, which is fairly portable. Such globes are now on the market. We can confidently recommend this book to anyone who desires a general view of the military geography of the empire.

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*"A century of War (1815-1914)"; by Captain G. de St. C. Stevenson, Royal West Kent Regiment; London; Hugh Rees, Ltd.*

This book contains a *precis* of the world's campaigns between 1815 and 1914. Some 92 campaigns are dealt with, in 133 pages, the origin, outline, and result being shortly and clearly stated in each case.

The book has been carefully compiled and forms a concise and useful historical gazetteer of all the wars that have taken place between Waterloo and the Great European War.

---

*Notes on colloquial Arabic of Lower Mesopotamia; by Lieutenant T. J. Kelly, R. F. C., Bombay; Thacker and Co., Ltd.*

A handy little pocket-book of 63 pages containing a collection



## **Reviews of Books.**

of short and simple phrases in the spoken language of Lower Mesopotamia, and expressly designed with a view to the requirements of those who wish to learn how to speak to the local Arabs. Arabic grammar is the study of a lifetime and the author has here very rightly left it alone. The man who begins to learn Arabic like a child, that is to say, by learning to string words together into common phrases, will get a far better return for his trouble than the average student who attacks the grammar first. A considerable insight into this wonderful language can thus be acquired, without reference either to grammar or to the oriental character, and those who adopt this plan will find Lieut. Kelly's book most useful. The correct pronunciation of course can only be learnt by ear. At the present time there are many officers and others to whom even a smattering of colloquial Arabic would be of value and it is to such that these notes will prove particularly useful. The book is clearly printed and its small price should ensure for it a large sale.

---

*Straight tips for "Mesopot" with maps and plans; by the author of "Straight tips for Subs." Bombay; Thacker and Co., Ltd. Price Rs. 2,*

This book contains a collections of practical hints on Mesopotamia and is evidently written by one who knows that country well. It opens with an interesting description of Mesopotamia, ancient and modern, and contains chapters on the climate and what to wear, your kit and what to take, your stores and how to get them, your health and how to keep it, besides many other important matters. The book is amusingly written and of considerable practical value, and if those under orders for Mesopotamia will spend two rupees on these straight tips they will not only save themselves from buying many useless things, but they will find themselves on arrival to be as comfortably fitted out as field service conditions could possibly admit.

---

*Standing Orders of the Scots Company, Bombay Volunteer Rifles.*

Concise, practical, and a book which should prove very useful, though its title of Standing Orders is scarcely in accordance with F. S. R., Part I, para. 11, which states that the object of Standing Orders is to adopt existing regulations to local conditions. We consider that



these Standing Orders are to a great extent in themselves the regulations, and we would suggest that, in the next edition which we anticipate will be brought out to meet the new requirements, the title be altered to the Rules and Regulations of the Bombay Scots Company, Indian Defence Force.

The book itself has been carefully compiled and is well got up and does great credit to the Bombay Volunteer Rifles.

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## ***Survey of India.***

The maps published by the Survey of India are usually available in one or more of the following editions :—

- (1) **Layered Edition.**—Printed in colours with contours and graduated layer tints to show altitudes and shading to emphasize the hills.
- (2) **Political Edition.**—Printed in colours with colour ribands along boundaries, contours to show altitudes and shading to emphasize the hills.
- (3) **Provisional Issue.**—Printed in black with hills in brown. Colour ribands along boundaries are added by hand, when required, at an extra cost of 2 annas per sheet.

The topographical maps from modern surveys, *i. e.* 1905 to date, are printed in 5 colours, while those from surveys prior to 1905 are usually printed in black, or black with brown hills.

The scales of publication are :—

- (i)  $\frac{1}{1,000,000}$  or nearly  $1'' = 16$  miles, in Layered and Political Editions and Provisional issues.
- (ii)  $1'' = 4$  miles, in Layered and Political Editions and Provisional issues.
- (iii)  $1'' = 2$  miles, in Political Edition only, but without colour ribands along boundaries.
- (iv)  $1'' = 1$  mile, in Political Edition only, but without colour ribands along boundaries.

Index maps illustrating the publications on the above scales may be had gratis from the Officer in Charge, Map Record and issue Office, 13, Wood Street, Calcutta, from whom maps and information as regards prices, etc. may also be obtained.

Maps on the Government Service are supplied on book transfer and to the public by V. P. P. except when required mounted, when prepayment is necessary, as maps once mounted for customers cannot be received back.

General maps of India, maps of Provinces, Districts and Cantonments, are also published on various scales, particulars of which may be obtained on application.



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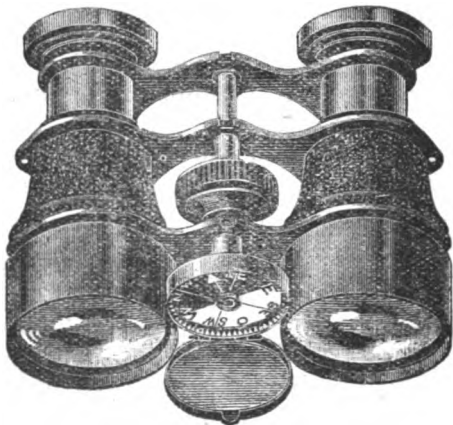
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# United Service Institution of India.

## PRIZE ESSAY GOLD MEDALLISTS.

*(With rank of Officers at the date of the Essay).*

- 1872...ROBERTS, Lieut.-Col. F. S., V.C., C.B., R.A.  
1873...COLQUHOUN, Capt. J. A. S., R.A.  
1874...COLQUHOUN, Capt. J. A. S., R.A.  
1879...ST. JOHN, Maj. O. B. C., R.E.  
1880...BARROW, Lieut. E. G., 7th Bengal Infantry.  
1882...MASON, Lieut. A. H., R.E.  
1883...COLLEN, Maj. E. H. H., S.C.  
1884...BARROW, Capt. E. G., 7th Bengal Infantry.  
1887...YATE, Lieut. A. C., 27th Baluch Infantry.  
1888...MAUDE, Capt. F. N., R.E.  
    YOUNG, Maj. G. F., 24th Punjab Infantry (especially awarded a silver medal).  
1889...DUFF, Capt. B., 9th Bengal Infantry.  
1890...MAGUIRE, Capt. C. M., 2nd Cav., Hyderabad Contingent.  
1891...CARDEW, Lieut. F. G., 10th Bengal Lancers.  
1893...BULLOCK, Maj. G. M., Devonshire Regiment.  
1894...CARTER, Capt. F. C., Northumberland Fusiliers.  
1895...NEVILLE, Lieut.-Col. J. P. C., 14th Bengal Lancers.  
1896...BINGLEY, Capt. A. H., 7th Bengal Infantry.  
1897...NAPIER, Capt. G. S. F. Oxfordshire Light Infantry.  
1898...MULLALY, Maj. H., R.E.  
    CLAY, Capt. C. H., 43rd Gurkha Rifles (specially awarded a silver medal).  
1899...NEVILLE, Col. J. P. C., S.C.  
1900...THULLIER, Capt. H. F., R.E.  
    LURBOCK, Capt. G., R.E., (specially awarded a silver medal).  
1901...RANKEN, Lieut.-Col. G. P., 46th Punjab Infantry.  
1902...TURNER, Capt. H. H. F., 2nd Bengal Lancers.  
1903...HAMILTON, Maj. W. G., D.S.O., Norfolk Regiment.  
    BOND, Capt. R. F. G., R.E., (specially awarded a silver medal).  
1904...MACMUNN, Maj. G. F., D.S.O., R.F.A.  
1905...COCKERILL, Maj. G. K., Royal Warwickshire Regiment.  
1907...WOOD, Maj. E. J. M., 99th Deccan Infantry.  
1908...JEUDWINE, Maj. H. S., R.A.  
1909...MOLYNEUX, Maj. E. M. J., D.S.O., 12th Cavalry.  
    ELSMIE, Maj. A. M. S., 56th Rifles, F. F., (specially awarded a silver medal).  
1911...MR. D. PETRIE, M.A., Punjab Police.  
1912...CARTER, Major B. C., The King's Regiment.  
1913...THOMSON, Major A. G., 58th Vaughan's Rifles (F. F.)  
1914...BAINBRIDGE, Lieut.-Col. W. F., D.S.O., 51st Sikhs, (F. F.)  
    NORMAN, Major C. L. M.V.O., Q. V. O. Corps of Guides  
    (specially awarded a silver medal).  
1915...No award.  
1916...CRUM, Major W.E., V.D., Calcutta Light Horse.



## MacGREGOR MEMORIAL MEDALS.

—o—

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of May:—

(a) For officers—British or Indian—a silver medal.

(b) For soldiers—British or Indian—a silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution, who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.\*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

### *Note.*

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

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\* *N. B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves; also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, such as Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.



## MacGregor Memorial Medallists.

*(With rank of Officers at the date of the Award).*

- 1889...BELL, Col. M. S., V.C., R.E., (specially awarded a gold medal).
- 1890...YOUNGHUSBAND, Capt. F. E. King's Dragoon Guards.
- 1891...SAWYER, Major H. A., 45th Sikhs.  
RAMZAN KHAN, Havildar, 3rd Sikhs.
- 1892...VAUGHAN, Capt. H. B., 7th Bengal Infantry.  
JAGGAT SINGH, Havildar, 19th Punjab Infantry.
- 1893...BOWER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).  
FAZALDAD KHAN, Dafadar, 17th Bengal Cavalry.
- 1894...O'SULLIVAN, Major G. H. W., R.E.  
MULL SINGH, Sowar, 6th Bengal Cavalry.
- 1895...DAVIES, Capt. H. R., Oxfordshire Light Infantry.  
GANGA DYAL SINGH, Havildar, 2nd Rajputs.
- 1896...COCKERILL, Lieut. G. K., 28th Punjab Infantry.  
GHULAM NABI, Sepoy, Q. O. Corps of Guides.
- 1897...SWYAYNE, Capt. E. J. E., 16th Rajput Infantry.  
SHAHZAD MIR, Dafadar, 11th Bengal Lancers.
- 1898...WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.  
ADAM KHAN, Havildar, Q. O. Corps of Guides.
- 1899...DOUGLAS, Capt. J. A., 2nd Bengal Lancers.  
MIHR DIN, Naik, Bengal Sappers and Miners.
- 1900...WINGATE, Capt. A. W. S., 14th Bengal Lancers.  
GURDIT SINGH, Havildar, 45th Sikhs.
- 1901...BURTON, Major E. B., 17th Bengal Lancers.  
SUNDAR SINGH, Colour Havildar, 31st Burma Infantry.
- 1902...RAY, Capt. M. R. E., 7th Rajput Infantry.  
TILBIR BHANDARI, Havildar, 9th Gurkha Rifles.
- 1903...MANFIELD, Lieut.-Colonel C. C., I.M.S.  
GHULAM HUSSAIN, Lance-Dafadar, Q. O. Corps of Guides.
- 1904...FRASER, Capt. L. D., R.G.A.  
MOGHAL BAZ, Dafadar, Q. O. Corps of Guides.



## **MacGregor Memorial Medallists—*contd.***

1905...RENNICK, Major F., 40th Pathans, (specially awarded a gold medal).

MADHO RAM, Havildar, 8th Gurkha Rifles.

1906...SHAHZADA AHMAD MIR, Risaldar, 36th Jacob's Horse.

GHAFFUR SHAH, Lance-Naik, Q. O. Corps of Guides Infantry.

1907...NANGLE, Capt. M. C., 92nd Punjabis.

SHEIKH USMAN, Havildar, 103rd Mahratta Light Infantry.

1908...GIBBON, Capt. C. M., Royal Irish Fusiliers.

MALANG, Havildar, 56th Punjabi Rifles.

1909...MUHAMMAD RAZA, Havildar, 106th Pioneers.

1910...SYKES, Major P. M., C.M.G., late 2nd Dragoon Guards (specially awarded a gold medal).

TURNER, Capt. F. G., R.E.

KHAN BAHADUR SHER JUNG, Survey of India.

1911...LEACHMAN, Capt. G. E., The Royal Sussex Regiment.

GURMUKH SINGH, Jemadar, 93rd Burma Infantry.

1912...PRITCHARD, Capt. B.E.A., 83rd Wallahjabad Light Infantry (specially awarded a gold medal).

WILSON, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.

MOHIBULLA, Lance-Dafadar, Q. V. O. Corps of Guides.

1913...ABBAY, Capt. B. N., 27th Light Cavalry.

SIRDAR KHAN, Sowar, 39th (K.G.O.) Central India Horse.

WARATONG, Havildar, Burma Military Police (specially awarded a silver medal).

1914...BAILEY, Capt. F. M., I.A. (Political Dept.)

MORSHEAD, Capt. H. T., R.E.

HAIDAR ALI, Naick, 106th Hazara Pioneers.

1915.. WATERFIELD, Capt. F. C., 45th Rattray's Sikhs.

ALI JUMA, Havildar, 106th Hazara Pioneers.

1916...ABDUR RAHMAN, NAIK, 21st Punjabis.

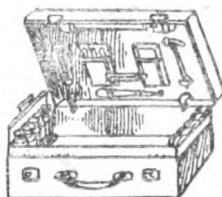
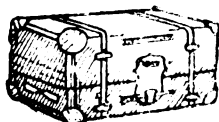
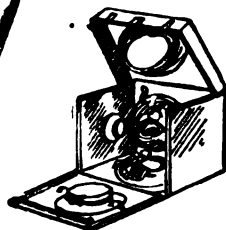
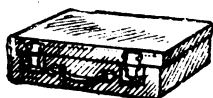
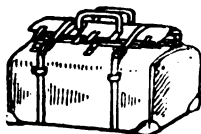
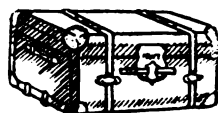
ZARGHUN SHAH, Havildar, 58th Rifles (F. F.)

(Specially awarded a Silver Medal).





# N.W.T



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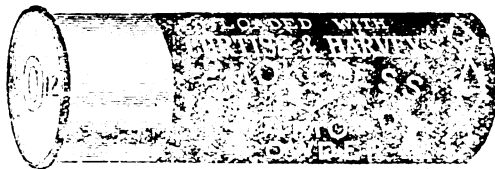
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JULY, 1917.

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They are specially useful for instruction in map reading, tactical schemes and in preparation for examination, and can be had either of English or Indian country.

### **IV.—Premia for Articles in the Journal.**

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

### **V.—Contributions to the Journal.**

With reference to Army Regulations, India, Volume II, paragraph 487, and King's Regulations, paragraph 453, as amended by Army Order 340 of 1913, intending contributors to the Journal of the United Service Institution of India are informed that action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee. Contributors are, therefore, responsible that the sanction of their immediate superior has been obtained, and this should be noted on all articles sent for publication. Articles need not be submitted in duplicate.

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### **VII.—Gold Medal Prize Essay 1917-18.**

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**The manœuvres of the future, and the general principles on which higher peace training should be conducted in view of the lessons of the present war.**

The following are the conditions of the competition:—

(1) The Competition is open to all gazetted officers of the Civil administration, the Navy, Army and Volunteers who are members of the U.S.I. of India.

(2) Essays must be printed or type-written and submitted in *triplicate*.

(3) When a reference is made to any work, the title of such work is to be quoted.

(4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto written on the outside, and the name of the competitor inside.



# United Service Institution of India.

JULY, 1917.

## SECRETARY'S NOTES.

### I.—New Members.

The following members joined the Institution between the 1st April and 25th June 1917 inclusive:—

#### LIFE MEMBERS.

Captain R.J.N. Norris.

Major N.D. Calder.

#### ORDINARY MEMBERS.

Captain L. Johnston.  
Colonel H.B. Holmes  
Captain L.E. Viuing  
2nd Lieut. J.S. Mohony  
" G.C. Laughton  
" A.P.R. Grindley  
Lieut. W.R. Moll  
Major H.W. Twiss  
Lieut. L.G.W. Hamber  
Lieut. R.D'Oyly-Hughes  
Lieut. W.R. Ransford.  
2nd Lieut. W.W.T. Moore  
" D. Keegan  
" F.E.N. Faithfull  
" W.W. Linney  
Lieut. H.N. Christian  
Captain E.J. Cumming  
2nd Lieut. A.J.M. Kilroy  
Lieut. D.A. Christie  
" G.F. Bunbury  
2nd Lieut. H.E. Winthrop  
" K.K. O'Connor  
Lieut. W.J. Crocker  
Captain H.B. Walker  
Lieut. J.B. Scott  
Captain B.H. Matheson  
G.C. Denham, Esq.  
Br.-Genl. W.W.T. Duhan

2nd Lieut. T.C. Levingston  
2nd Lieut. S.M. Stock  
Lieut. E.F. Dunk  
2nd Lieut. D. Goodwillie  
" W.D. Embleton  
Lieut. J.H. Towle  
Captain H.W.H. Howell  
Lieut. General Sir E.A. Altham  
Surgeon General T.J. O'Donnell  
2nd Lieut. H.L.C. Robertson  
Major F.C. Bannatyne  
Captain J.A. Ferguson  
" G. Ireland  
2nd Lieut. P.R.H. Skrine  
" R.M. Lindsley  
" J.V. Davys  
Major W.H. Lane  
Lieut. M.H. Oldfield  
Captain M. Stagg  
Major General S.M. Renny  
Major C.E. Edward-Collins  
" E.J. Loring  
" D.A. Thomson  
" S.B. Patterson  
Captain R.S. Troup  
2nd Lieut. J.B. Nelson  
Lieut. A. Bayley  
Major H.M. Alexander

### II.—Tactical Problems.

In order to assist officers working for tactical examinations, the Institution has schemes for issue to members only, at Rs. 5 each, which includes criticism and a solution by a qualified officer; 26 schemes are now available.



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(4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto written on the outside, and the name of the competitor inside.



## **Secretary's Notes.**

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June 1918.

(6) Essays will be submitted for adjudication to referees chosen by the Council. No medal will be awarded if the Council consider that the best essay is not of a sufficient standard of excellence.

(7) The name of a successful candidate will be announced at a Council Meeting which will be held in August or September, 1918.

(8) All essays submitted are to become the property of the United Service Institution of India *absolutely*, and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

(9) Essays should not exceed about 15 pages of the Journal when printed, exclusive of any appendices, tables or maps.

### **VIII.—Prize Essay Competition. Indian Defence Force.**

The Council of the United Service Institution of India have decided to offer two prizes of Rs. 100 and 50 respectively for the best essay on:—

#### **“Improvement and Further Development of the Indian Defence Force.”**

The competition is confined to *all ranks* of the Indian Defence Force. Essays are to be *strictly anonymous*. Each should have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto written on the outside and the name of the competitor inside. Essays must be addressed to the Secretary, United Service Institution of India, Simla. They should be printed or type-written and submitted in *triplicate*, before the 1st October 1917. All essays submitted are to become the property of the U.S.I. of India, *absolutely*, and authors will not be at liberty to make any use of their essays without the sanction of the Council of the U.S.I. The Council reserve to themselves the right of deciding whether the essays received are up to the required standard or not.

### **IX.—War Maps.**

War maps are on view in the Reading Room of the Institution, with the positions of the troops, so far as is known, marked with flags, in each theatre of War.

### **X.—Amendments to Rules of the U.S.I. of India.**

#### SECTION VI—MEMBERSHIP.

*Paras 2 and 3 of the above section have been amended to read as follows:—*

#### **Para 2.**

“Life Members of the Institution shall be admitted on the following terms:

Rs. 75 *plus* entrance fee Rs. 10 (*see* para 4) or Rs. 85 in all.



**Para 3.**

"Ordinary members of the Institution shall be admitted on payment of an entrance fee (~~see~~ para 4) of Rs. 10 on joining, and an annual subscription of Rs. 5 *to be paid in advance*. The period of subscription commences on 1st January."

**Para 3 (a)**

All members of the Institution resident in Simla for not less than 50 days during the year will be charged an *additional* subscription of Rs. 5 per annum from the 1st January 1917.

**XI.—Presentations to the Institution.**

The Council gratefully acknowledge the receipt of the following books and publications:—

Presented by Major G. Sugiyama:—

"The War Pictures of Kiao-Chao".

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Presented by Lt.-Col. A.L. Longhurst, 7th Gurkha Rifles:—

"Books on the Great War", Volumes I to IV. (An Annotated Bibliography of Literature issued during the European Conflict)

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Presented by Major H.G.S. Trotter, I.A:—

"Kalam-i-urdu" Parts I and II.

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# Survey of India.

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The maps published by the Survey of India are usually available in one or more of the following editions:—

- (1) **Layered Edition.**—Printed in colours with contours and graduated layer tints to show altitudes and shading to emphasize the hills.
- (2) **Political Edition.**—Printed in colours with colour ribbands along boundaries, contours to show altitudes and shading to emphasize the hills.
- (3) **Provisional Issue.**—Printed in black with hills in brown. Colour ribbands along boundaries are added by hand, when required, at an extra cost of 2 annas per sheet.

The topographical maps from modern surveys, *i. e.* 1905 to date, are printed in 5 colours, while those from surveys prior to 1905 are usually printed in black, or black with brown hills.

The scales of publication are:—

- (i)  $\frac{1}{1,000,000}$  or nearly  $1'' = 16$  miles, in Layered and Political Editions and Provisional issues.
- (ii)  $1'' = 4$  miles, in Layered and Political Editions and Provisional issues.
- (iii)  $1'' = 2$  miles, in Political Edition only, but without colour ribbands along boundaries.
- (iv)  $1'' = 1$  mile, in Political Edition only, but without colour ribbands along boundaries.

**Index maps** illustrating the publications on the above scales may be had gratis from the Officer in Charge, map Record and issue Office, 13, Wood Street, Calcutta, from whom maps and information as regards prices, etc. may also be obtained.

**Maps on the Government Service** are supplied on book transfer and to the public by V. P. P. except when required mounted, when prepayment is necessary, as maps once mounted for customers cannot be received back.

**General maps of India**, maps of Provinces, Districts and Cantonnments, are also published on various scales, particulars of which may be obtained on application.



**The Journal**  
OF THE  
**United Service Institution of India.**

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**Vol. XLVI.]**

**JULY 1917.**

**[No. 208.]**

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**NOTES ON JUNGLE WARFARE.**

BY

CAPTAIN E. M. HOBDAY, 41ST DOGRAS.

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The various methods of waging war with which it behoves the officer of the present day to acquaint himself may be conveniently placed under the following headings :—

1. Trench warfare.
2. Warfare in Open Country.
3. Warfare in Enclosed Country.
4. Hill Warfare.
5. Street fighting.

In almost every case these headings may be subdivided into:—

- (a) Modern warfare against civilised nations.
- (b) Savage Warfare.

Under heading number 3, Warfare in enclosed country, we may consider—

1. Jungle warfare.
2. Bush fighting.

In many works Jungle warfare and Bush fighting are treated synonymously. I have purposely placed them under different headings for the following reasons.

In Jungle warfare proper, the nature of the terrain imposes march formations on a narrow front of long columns in file or single file, along a single line of advance. The country varies only in respect to whether its surface is flat or hilly. The power of manoeuvre is extremely limited. Aeroplanes are useless.



In Bush Warfare the terrain varies considerably and wider formations can frequently be employed.

For example in Dahomey and Ashanti the British and French Forces are described as advancing on parallel lines and adopting an elastic form of square as their normal battle formation.

Again Small Wars page 360 states, "it is a broad tactical rule that, in bush warfare, troops when suddenly fired into should promptly charge towards the spot whence the fire comes".

While these examples have been proved to be practicable and valuable in Bush Country, they would be impossible in thick jungle.

Forests of trees interspersed with cane brake, tangled with creepers, based on a luxurious growth of rank vegetation underfoot, such as is met with in Burma and Assam, cramp any form of extended movement, while a charge would probably land a man on his head before he could penetrate more than a few yards from the path along which the column progresses.

Aeroplanes, which have been usefully employed in scouting over the lighter bush ranges of East Africa, can see nothing in Jungle country and would have far to fly to find a base.

The above form the main differences between Bush and Jungle Warfare, and the notes compiled hereunder apply more especially to the latter as opposed to the former, and of the subheads already mentioned they fall under the category of Savage warfare as opposed to warfare against civilised nations.

Troops employed in Jungle Warfare will almost invariably be acting on the offensive, while the jungle tribes opposed to them will be on the defensive, which includes the power to counter attack. The role of troops so employed will frequently be that of a Punitive Column.

The Objective will be the penetration of the enemy's country, driving him back wherever met with, until his resistance is broken and he surrenders.



It will seldom be possible to inflict a crushing defeat, as the enemy will not resist when threatened on a flank. Attention must therefore be paid to the destruction of all objects which enable him to prolong the struggle, the burning of his villages, seizure of hidden grain and live stock, and the destruction of building materials near his villages.

These steps, combined with a vigorous offensive, continually driving the enemy from his stockades and fortified positions, are the best means to attain the objective.

May be mountainous, hilly, undulating or flat; but in each case covered with forests and a thick tangle of undergrowth, limiting the range of vision to a few yards. Bamboos and creepers intermingle to form a screen behind which the enemy can lurk unseen. Narrow winding footpaths may exist from village to village, necessitating an advance in file or single file. On these, the approaches to their homes, the enemy may be expected to resist, and it will be necessary to advance with caution. Where these paths exist it is usually possible to utilise mule and pony transport, but in some of the mountainous districts of Assam and in the swamps of Africa only coolie transport can be used. The cutting of roads and paths is too tedious a business for a small force and should not be undertaken, unless the non-existence of previous paths or the contemplation of a long campaign by a considerable force renders it necessary.

The water supply varies with the country, but it may safely be assumed that, where there is a village, water is close by. Care should be taken to see that it has not been poisoned or polluted by the enemy.

**The Enemy.** The jungle dweller has the following advantages:—

1. He knows the ground.
2. He can see where the ordinary man is blind.
3. He is swift and noiseless in the jungle.
4. He is on the Defensive and can invariably secure a



good line of retreat.

5. He is practically invisible.

His disadvantages lie in his being badly armed and undisciplined, the latter resulting in lack of cohesion and concerted action.

His arms probably consist of muzzle loading rifles, bows and arrows, spears and dahs.

*His method of attack* is firing at close quarters from the jungle and bolting; charging with swords and spears, and sometimes attacking camps at night, though as a rule he prefers to work by day. In addition to the actual weapons of offence he may employ stone shutes and man traps.

*For defence*, he builds excellent stockades, protected on the flanks by smaller subsidiary stockades and in front by concealed rifle pits.

The approach to a stockade is frequently sown with panjies large and small, while the face is often similarly decorated.

His loopholes, when they consist of bamboos as they frequently do, give a limited field of fire.

Per contra the tribesman's advantages are *our disadvantages*.

1. We do not know the ground and are forced to move cautiously over it on a very restricted front, while it is being searched.

2. Our scouts and spies are our eyes and, unless they be trained ones, we may be led into trouble.

3. The advance of a column makes a certain amount of noise, which gives the enemy warning of its approach.

4. A column becomes visible to the defender and therefore under his fire before the column is aware of the enemy's presence, unless the scouting is exceptionally good.

*Our Advantages* consist of the possession of trained troops plus a certain amount of knowledge, culled from experience, as to the habits and customs of the enemy.

The sudden discharge of a rifle at about twenty paces distance by an unseen foe is trying to the best trained troops; and the impossibility of

**Morale.**



being able to get at the enemy with the bayonet, plus the certainty of doing very little damage by employing rifle fire, is bound to react unfavourably on the morale of the men, particularly if the enemy's fire takes effect.

While good scouting and the employment of flankers may prevent this unpleasant mode of attack to a great extent, still, sniping will occur, and more casualties will fall to the enemy's snipers than during an attack on a stockade.

As it is usually impossible to charge, the best method will be for the unit concerned to reply briskly to the enemy's fire and then to continue the advance. Care must be taken to control fire and not waste ammunition.

The enemy rely on their stockades and if they are quickly ejected from these protections their morale is diminished, while that of the column is increased.

**Columns.** The size of columns depends on:—

1. The number and character of the enemy.
2. The work required to be performed.

The larger the Column, the longer the line on the march and the greater the difficulty of protection on the move and of finding a suitable camping ground when at rest. In former operations columns have varied in strength from 200 to a brigade.

Some form of gun for breaching stockades should be included in the column, with a few Lewis guns and hand-grenades if available. A good supply of cutting tools, preferably of the type used locally, is essential. These can be carried by the men.

Small Wars p. 351 states: "Scouting in the bush is exceptional. It is best left to irregulars on

**Scouts.** the spot, and this principle is now very generally accepted when a bush campaign is in contemplation."

It may be accepted that, unless the men have received long and special training on suitable ground, the ordinary infantry scout is practically helpless in jungle warfare.



As Scouts are the eyes of the column and it is on them that the safety of the column largely rests, it is as well to consider this important question at some length.

The advantages of employing local friendlies are obvious.

Friendlies employed by a column may be divided into the following three categories, 1 Spies, 2 Guides, and 3 Armed Scouts or Sepoys.

The first and second come into the province of the Political or Civil Officer accompanying the column, and the question of their being armed and the scope of their employment will be decided by him.

Reports by Spies and Guides should be accepted with caution and no military precautions for the safety of the Column should be omitted, because of information received from these sources.

Armed Scouts are better trained than untrained and should, unless they belong to a recognised Corps, be provided with a special badge by which they can be recognised.

The trained indigenous Sepoy is probably the most reliable and the best material for actual scouting purposes with the column. He will probably work better in the presence of a British Officer.

The Jungle Scout has a particularly arduous job and, as is the case in all scouting, most dangerous. Therefore clothe and arm him as best you can for the work he has to perform.

Khaki is an excellent colour against certain backgrounds. In the jungle and on the side of a hill a dirty grey is considerably less conspicuous. The writer has noticed this in Burma, where the Kachin fights either in the dirtiest and most dingy coloured clothes, or naked, except for a loin cloth, smearing the body with dust and mud. On the N. W. Frontier also, the Pathan in his "dirt" coloured clothes is far harder to detect against a hill side than a sepoy in the conventional khaki uniform. The best colours for invisibility in the jungle are a dirty grey or a combination of red and green such as is in use for shikar coats.



As regards arms, the safety of the scout will often depend on his being a good snaphooter, and a Snider loaded with slugs will be his best weapon. He must also be provided with a cutting tool for clearing jungle. His native weapon will probably be best, as it is the one to which he is accustomed, and with it he can work faster and feel more at home than with any other form of cutting tool. Scabbards on the belt are to be avoided as the handle of the weapon when not in use catches in every creeper and interferes with the man's progress. The Kachin wears his dah close under the armpit, where it is easily accessible and is not in the way.

Scouts should travel as light as possible and only the hardiest of the men should be chosen for this very arduous work.

Their instincts should not be allowed to rust in peace time. Plenty of shikar and jungle parades are a necessity to keep them up to the mark. There are some excellent hints on the training of Jungle scouts in *Jungle and River Warfare* by Major Gordon Casserly, which apply just as much to the indigenously recruited Sepoy as to the Regular.

The employment of local tribes as scouts is by no means essential. Their use is advocated, and rightly, as the best means of outwitting the enemy at his own game, but the Indian Army contains the most excellent material, notably Gurkhas and Pathans, from which, given time, terrain, and opportunity, it is not difficult to train a most efficient body of Jungle Scouts.

The general principles governing march formations are **Formations.** laid down in F. S. Regs. secs., 149 et seq.

Where a column is forced to proceed in single file along a narrow winding footpath, it is of course vulnerable along its entire length. Flankers and an adequate guard to protect the baggage must therefore be detailed. Flankers should never be far from the column and should work in pairs.

The tactical unit must be a small one, in order to deal with local attacks quickly and efficiently.



## **Notes on Jungle Warfare.**

The Burma Military Police possess a paper covered book entitled *Jungle Warfare*. This work consists of about 40 pages and contains a complete system of drill for formations in the jungle. On page 2 it states that "The Company Commander... proceeds to tell off his Company into sections of five files with 2 N. C. O's to each section".

These sections are tactical units, and the object of having 2 N. C. O's is to have one at the head and one in rear of each section when in single file. Under the present Company system the Section would suffice as the tactical unit.

The Advance Guard consists, as laid down in F. S. Regs, of a point (one section), and flankers (2 sections, one on either flank), who maintain connection with one another by means of signals blown on the whistle. The point Commander is usually responsible that communication is kept up with the flankers. The whole of this party should be composed of scouts. Flankers should work ahead of the point, otherwise the point will be sniped. The point Commander sets the pace for the Column.

A convenient order of march for the Main Body is to detail 3 Sections to follow immediately behind the Advance Guard. No. 1 Section reinforces to the front, No. 2 Section to the right flank and No. 3 to the left flank, then the Guns with escort followed by the remainder of the Main body. Sections should be numbered consecutively from front to rear throughout the Column. Immediately in rear of the Guns there should be at least one mule with entrenching tools and one mule with small arm ammunition. The path will need improving frequently before gun mules can pass over it, stockades will have to be demolished and obstacles removed. The fighting force is really the head of the column and it may be difficult to bring up ammunition from the rear of the column.

When operating in hilly country and the path winds, firing, and line of fire to a flank must be well controlled, otherwise one part of the column will be firing at their own men in the column, through the jungle across



a nullah without knowing it. Men should be trained to advance to the edge of the path and fire up or down hill as the case may be. There is a great tendency to get back and fire across the path which must be stopped at once, as this means waste of ammunition and renders communication by means of messengers impossible.

It must be remembered that only very small portions of the column are visible to one another, (frequently only ten men will be in actual sight of one another), and that therefore a great deal depends on the section Commander, who must not hesitate to act on his own initiative to repel local attacks. Section Commanders should act energetically in mutual support, not forgetting to send word to the Column Commander to inform him fully as to what is occurring. They should not be drawn away from the column and should resume their places and pass up word as soon as their object, namely the dispersal of the enemy, is accomplished.

When firing is heard the Column should be halted, the situation should be cleared up as quickly as possible, and the Column should continue the advance.

It is a good plan to issue a standing order that at all halts sections will kneel and face outwards alternately, *i.e.* No. 1 faces to the right No. 2 to the left and so on down the line.

Bayonets should always be fixed.

Passing verbal orders is very important and should be frequently practised. Situations arise so quickly that it is often impossible to issue written ones.

Scouts and Advance guards can fire clearing volleys through the jungle to try to draw the enemy's fire with advantage. This has a discouraging effect on snipers and may lead the enemy to disclose the position of a stockade before he intended to.

All ranks should realise the necessity of keeping absolute silence and their eyes and ears always open.

Strict march discipline is essential. A man must never fall out for purposes of nature unattended. There should be no smoking on the line of march, the Column should keep well closed up.



**Notes on Jungle Warfare.**

The Rear guard must watch the rear as well as their flanks.

The best position for the O.C. is in front of the guns.

Send Flank sections round outside the village on both flanks

**Entering a Village.** and extend your point.

Place your guns and Lewis guns where they can give covering fire.

Advance your point by short rushes letting your flankers keep ahead.

Extend your sections in rear as they come up, reinforcing your flank sections till the Advance guard arrives at the far end of the village and you have surrounded it.

Detail parties to search each house and to look for hidden grain. This will probably be found concealed in the jungle or in hollow bamboos concealed in trees.

If the village is to be burnt, decide whether it will be used as a camping ground at any time. If so postpone the burning till the ground is no longer required. Ashes are dirty to camp on. Camping grounds are scarce.

If you have to pass through the village get the whole column through before you start burning operations. The Rear Guard is responsible for the safety of the men detailed to set fire to the village.

**Camps.** The principles as regards Camps are laid down in F.S.R.

Enter your camping ground as if it were a village, so that all round protection is secured at once.

Halt Main Body and transport till ground is cleared. Detail clearing party to get to work at once and post piquets while ground is being cleared.

As soon as ground is cleared, march main body and transport to their allotted places and start entrenching.

During day time station piquets over water, and far enough out to permit grazing or drivers to cut fodder.

At night have all piquets inside the perimeter if possible. If a detached piquet is necessary at night it must be strong



enough to be self supporting and must take up its position in time to allow for entrenching before dark.

Transport in Burma consists mainly of hired mules with Chinese drivers. Each man owns a certain

**Transport.** number of mules which are driven instead of being led and each man likes to keep his own mules together, which complicates loading, as the number of mules in one or two droves seldom corresponds to the number required to carry certain articles. Therefore be firm on the first days march and insist on mules carrying loads detailed to them.

Saddles are constructed so that the load is tied on before saddling up. The saddle with load is then placed on the mule. Loading is best left to Chinamen. When halted, saddles with loads should be stacked near the Quarter guard. Do not untie more loads than is absolutely necessary. The fewer loads to tie, the quicker the start in the morning.

Insist on punctuality in starting on leaving camp. If Chinamen are found cooking their breakfasts at the starting hour use a thick stick. It will save endless trouble. In other respects Chinamen are excellent men, hard workers, cheery and absolutely fearless.

A certain number of mules must be left spare for the drivers' use.

Coolie transport is a speciality. See official report on the Abor Expedition.

When casualties occur off the road have them brought to the doctor. Don't allow the doctor to go

**Casualties.** into the jungle. He will probably be shot if he does so, and there is only one of him.

Utilise friendlies to carry the wounded, and make bamboo stretchers. They will do this for a nominal wage and also help to clear jungle for a camping ground. Employing them on these duties economises men and material.



## **Notes on Jungle Warfare.**

Are almost impossible in jungle warfare. Without a moon the nature of the ground is an almost  
**Night Operations.** insuperable obstacle. With a moon the chances are that your advance will be discovered, before anything can be accomplished.

Instances have occurred where a few of the enemy have been surrounded by a small force acting at night but good guides and trained troops are essential, a combination not often procurable.

Small shikar parties sent into the jungle will discourage  
**Ruses de guerre.** snipers. Care should be taken that they do not stalk one another.

Marching through a village and leaving small parties concealed round it till the villagers return has been successful in accounting for some of the enemy, but jungle tribes are very wary, and picked men with some knowledge of the jungle are required to carry out this ruse successfully.

For every armed man there are ten unarmed watchers who note the movements of the column and inform their fighting men. It is very difficult therefore to surprise the enemy.

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The above notes have been jotted down at odd moments  
**Conclusion.** whenever the writer has had a little leisure.

They leave a good deal to be desired in arrangement and completeness, but if they prove of interest to any officer wishing to study this particular form of warfare they have not been compiled in vain.

The subject is not the less interesting in that no really successful method has as yet been formulated, by the employment of which a crushing defeat can be inflicted on Jungle Tribes, *i.e.* on their personnel.

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## **THE FUTURE OF THE INDIAN OFFICER**

BY

CAPTAIN W. B. WHITE, 39TH C. I. HORSE.

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As the modernity of the British Army may be said to date from the conclusion of the Great Boer War, so at the end of the present war a thorough upheaval and breaking down of old shibboleths will take place in the Indian Army, and not least among these will be the change in the position, responsibility, and status of the Indian Officer.

It is this rank which constitutes one of the greatest differences between the British and Indian Armies, drawn as it is from a class composed of men of considerable position and standing in their own homes, who have joined the army in the legitimate hope of attaining later to the Commissioned Ranks.

At first, that is to say, on the raising of the Indian Army, the Indian Officer was a man of warlike tendencies, a man of fighting ancestors. No better material could be found. He brought with him his own dependants, much as the Highland Laird did in the old days of Scotland, and the punishment meted out in the Lines, by the ordinary instruments of authority, sank into insignificance compared with that doled out to the offender, when once his Laird got him home.

He was first of all a gentleman and a man of standing, he was a "Friend of the English" in the old sense of the word, and his friendship with the Officers of his regiment was on a basis much more intimate than at present. His authority over his men was unlimited; in fact he was a big man and so esteemed himself.

That he was frequently illiterate was of no importance. The sword had been good enough for his fathers—let Babus hold the pen—and many a fine old Indian Officer, who fought staunchly for us throughout a long service, knew little of the art of cyphering.

Such then was the old Indian Officer,—not concerned with the niceties of drill and equipment but solely with the leadership



of men and actual fighting,—the intimate friend and socially, much more than at present, the equal of the British Officer.

But a time drew near when more was required of him.

The day of the muzzle loader was over. The science of warfare was growing more and more complicated. Questions of ammunition, stores and equipment, became more involved, while the idea of the standardisation of the Indian with the British Army began to receive attention. Inspections too became more common and more searching, with the result that a commanding officer, who wished for a good report, no longer left the Indian Officer so free a hand, but demanded that the British Officer should personally superintend work, hitherto considered out of his province.

Further more the spread of education was lessening the authority of the local magnate, and he could no longer bring in his dependants as he used to, but was forced to go further afield, thus bringing in men who had smaller regard for him than in the old days.

All this tended to lessen his individuality and authority, until he became in reality little more than the oil which smoothes the running of the machine, while the British Officer gathered unto himself nearly all his old functions.

That there are some native officers, who for strength of character and initiative rival their predecessors, is undeniable, but their numbers are few and the more so because our system tends to push them the way their natural inclinations lead them, namely towards shirking the assumption of authority, provided that they can place the burden of it on the shoulders of others.

The Indian Officer for the most part was content to drift with the stream. He educated himself, as much as was necessary, for the post he hoped some day to fill, and the result is, an Officer educated to a small degree, unversed in those parts of his profession with which he should be entirely conversant, and deprived by our system of much of the responsibility that should rightly be his.

It requires small talent to compose a destructive criticism,



the difficulty lies in the constructive, and so while finding it a simple matter to throw stones at the poor Indian officer, difficulties present themselves, when we come to the consideration of his improvement. One school would do away with him altogether and replace him with sergeants and sergeant-majors, thus depriving a loyal and deserving class of honourable rank and comparative affluence. Another, usually after the completion of executive command of their regiments, would bestow on him greater authority and more responsibility. Another would educate him more, until he is in actuality what he should be, the understudy of the British officer.

And so on, until the question of what to do with him becomes so involved that it is dropped, and he remains where he is, a courteous and affable gentleman, deeply immersed in questions of Committee, Funds, Leave, Furlough and Interior Economy, but without the "snap" and self reliance of a sergeant of a British regiment.

That he is personally related to a number of those under him, and is in fact the elder brother of what is, in most cases at least, a very happy family, is without doubt excellent, but it is by no means enough and we are confronted with the fact that when, as happened on several occasions in the present war, a regiment is deprived of practically all its British Officers as the result of a day's fighting, the Indian Officer is not good enough to carry on.

Now the British Officer does not become a first class leader by light of nature alone—he reads his profession, he passes examinations, he goes on courses, and does staff work, and all this, after his preliminary training at Sandhurst or Woolwich, where he has already been well grounded.

Why should not the Indian Officer do likewise?

There may be difficulties in the way, there are in all innovations, but after all no scheme is a failure until it has been tried and, as the present one is acknowledged to be defective, it would seem not unreasonable to try what can be done towards its



***The Future of the Indian Officer.***

improvement. It is with this end in view that the following suggestions are put forward:—

1. *Schools of Instruction.* Indian Officers to be attached to these for further instruction and training in the Art of War, Care of Horses and kindred subjects. Any Indian Officer adversely reported on at the end of his course to revert to his previous rank.
2. *Staff Rides.* Indian Officers to be sent to Brigade and Divisional Staff Rides. The object of these Rides to be simplicity and thorough grounding in work in the field. These will not be of a nature to teach duties, such as required in Staff Appointments and carried out in Staff Rides, as at present understood.
3. Accelerated Promotion.
4. Examinations in translations of the simpler tactical works.
5. Examinations for further promotion to the rank of Ressaidar and Ressaldar or Subadar, as the case may be, and no man to be promoted until he has passed the prescribed tests.
6. The enforcement of an earlier age limit of retirement and the certainty of civil employ later, if well reported on at the end of his service.
7. The absolute and definite understanding that family qualifications, though of course taken into account, will not secure the promotion of an incompetent.
8. The systematising of recruiting by the use of Recruiting Centres alone, which will allow of the "baton" being in every knapsack, as the fact of a man's ability to bring in recruits will no longer loom too large, when the question of his promotion crops up.
9. The modification of Regimental Accounts which exist at present at any rate in the Silladar Regiments, and which tend to transform the Indian Officer into a clerk or business man, in-



stead of a soldier. This evil will probably disappear of itself with the modification of the Silladar system, which is likely to take place after the conclusion of the war, if not before.

10. Promotion to other regiments if necessary, whereby a good man need not be kept back because of the absence of a vacancy in his own corps.
11. The delivery of the training of the regiment over to the Indian Officers for a short time annually, after which each to be reported on by his Commanding Officer.

That some of these suggestions are open to criticism is quite admitted. For instance in No. 8, there is no doubt that officers commanding regiments, who traditionally obtain good recruits, would object to the change. This would undoubtedly entail hardship on certain regiments. But it is argued that, as every man joining knows that he may attain the rank of Sirdar, the quality and standard of recruits, taken all round, will gradually raise itself, when once men of moderate family pretensions and good intellect find that, by joining the Army, they may attain to that higher rank which was before often debarred to them, owing to their inability to bring in recruits, and to the fact of their families being of no particular standing in their own part of the world. The recruits in various regiments will thus approximate more closely to one standard, while the man, who relies on the plea of birth only, will find himself lost. The "jungly" alone will find small encouragement, but this class will decrease in the ratio in which a higher class of recruit increases, and he will no longer be able to be brought in by his "laird", as often happens, to fill up a squadron or company vacancy, when an unforeseen number of recruits is suddenly required.

Again, with regard to No. 10, it may be argued that Commanding Officers will be chary of recommending good men, whom they wish to keep in their own regiments, for promotion to other corps. But the result of this would only be to draw the suspicion of the authorities on a regiment, which though continu-



ously unable to recommend for others, always supplied its own promotions. The obvious corollary would be, that such a regiment was equally unable to find men fit for promotions in its own ranks, and must therefore receive extraneous aid, and have strangers promoted into it from outside.

Lastly, and it appears chiefly, objection may be found to No. 11, and it may well be argued that the time available in the year is already too short in India to allow of the regiment being handed over to the Indian Officers, as not only the rank and file but also the British Officers, would suffer.

The only reply to this is that the proof of the pudding is in the eating, and it remains to be seen whether one month sacrificed in the interest of the Indian Officer will not be sufficiently repaid by his increased efficiency—besides which, it is quite an open question whether efficiency in other respects would suffer, as a large number of British Officers would be released for a month in the cold weather for courses, Staff Rides, or Instruction in Staff Duties, greatly to the benefit of these latter.

One more question may arise. If all this superior training is to be lavished on the Indian Officer, how can he content himself afterwards with his acknowledged somewhat minor duties in the Lines. Against this it may surely be replied that if a British Officer, after spending years of work for and at the Staff College, and in perfecting himself in his profession, often has to be content with being a company officer in his regiment, and very likely under one who has nothing but his seniority to recommend him, the Indian officer must content himself also.

Changes are in the air. The question of Cadres of Officers for the Indian Army may be a possibility under a system of half pay, by which a strong personnel of British Officers will be available in War. And should the Indian Officer be improved and forced to take a position consistent with his title, then the advocates of the Cadre System, to which the enormous casualties in wars of the present seem to point, will find their way greatly simplified, even if only from a point of view of expense. More highly trained Indian Officers would permit of the personnel of British Officers on full pay, and present with the regiment in peace, being greatly reduced.



**Lecture delivered by Major G. Aylmer, M. O.  
Deputy Assistant Director of Transport, 2nd  
(Rawalpindi) Division at Lansdowne Insti-  
tute, Rawalpindi, on 14th April 1917.**

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MAJOR GENERAL BUNBURY, GENTLEMEN,

I have been asked to give a lecture on transport and have therefore selected the subject of Indian Mule Transport in this War. Every day on the Mall you see the Indian Mule driver with his A. T. Cart and bobby mules, so you may be interested to hear how many thousands of similar turn-outs got on in France, Gallipoli, Egypt and Mesopotamia.

I have a lot of ground to cover in a very limited time and I have therefore avoided all technicalities, but I hope to prove to you that the Indian Mule Driver is one of the most priceless gems of the Indian Army. Needless to say, I have my axe to grind on his behalf, and, needless to say, I am not going to miss this opportunity of sharpening it. He is as brave as a Bengal tiger, but has always had to bear the stigma of the word "follower"—if "follower" was intended to convey the fact that he would *follow* any one into the mouth of Hell, it would be entirely appropriate, because for some totally inexplicable reason, once he possesses a cart and a pair of mules, he becomes devoid of all fear. We hope he will shortly enjoy the status of a fighting man and be equal to a Royal Artillery driver. (Ed. This has since been brought about).

I have had the great luck to be on service with this class of transport from the commencement of the War until last Christmas and during that time we did the circular tour from India to France, France to Egypt, Egypt to Gallipoli, Gallipoli back to Egypt and Egypt to Mesopotamia. I have therefore had the advantage of seeing what it can do under conditions never dreamt of in our philosophy, and I can safely say I have never heard of a single instance of a driver shirking a dangerous duty.

The Indian is a natural philosopher, as nothing ever really surprises him. I have explained wireless telegraphy, flying ma-



chines, submarines etc., to them, and all they ever said was "bahut accha bandobast, Sahib". When we went to France, we were a convoy of about 40 ships, six abreast, and I explained vaguely how a ship found its way across the Ocean, but I found they had already solved that to their own satisfaction. From the bows of our ship the track of the one in front was of course quite plain, and, from the blunt end, the track we made equally clear, and so they thought this was the road we were following.

It is an old story, but a good illustration of the Indian's mind. An Indian Officer who had gone Home for the Coronation, seen the Spithead Review, been in the Royal Enclosure at Ascot, seen a Levee and a few other unconsidered trifles, wrote to his Commanding Officer in India to say that the most marvellous thing he had seen in England was the gram crusher at Aldershot.

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To begin at the beginning, my Mule Corps was stationed at Sialkot when War was declared, and the magic and electrifying word "Mobilise" arrived a few days later. Thanks to having spent the previous year getting my Corps fit for service, I was able to report at the end of three days "I am ready to move". Trains were provided, and we reached Bombay without any difficulties or incidents. All my men were recruited in the North of India and had never seen a ship or heard of the sea, and when they saw the first ship along side the quay they wanted to know how many mules were going to pull it. The orders were that each unit should be independent and have its own transport on board, and this proved a very great mistake and one we didn't repeat.

The transport was distributed over all the ships of the big convoy, and consequently it was impossible, with only one officer and four Warrant and Non-Commissioned Officers per Mule Corps, properly to superintend them on the voyage. As luck would have it, the ship with the Head Quarters of the Corps, spare men, carpenters, blacksmiths, saddlers etc., was



the last to arrive in Marseilles, and consequently there was no one available for several days to put carts together, repair harness etc., etc., and ships were unloaded at a number of different quays. All this muddle could have been avoided by allotting two or three ships for transport only. A few days later we proceeded to Orleans, a three days journey, and were accorded a most enthusiastic welcome at every station we came to.

As my babu said to me on the way up to Orleans, "Sahib, they are very polite in this country" and they certainly were. There were guards of honor, Generals, Staff Officers, Cavalry Officers, at every station we stopped at, and, such is the wonderful politeness of the French Officers, it was only at the end of the third day an officious interpreter gave the show away.

The wire that went up the line had said that the train contained "le train de l' équipage Indien quartier-général" and they were expecting a General and his Head Quarters of the Indian Transport. I remembered afterwards veiled enquiries about some mythical general, which I parried in my best French, by saying that Generals usually went by the Mail. Another instance shewing how little the French know about our Indian customs occurred during this journey. A driver was reported missing, and I regret to say I did him the injustice of thinking he had been lured away by romance. About a fortnight later I received a voluminous correspondence, telegrams etc., between the Mayor of some place and the Indian Corps Staff, with reference to finding the body of a driver on the line, who had been killed by a train. They refused to bury him until they got his name, rank and designation. As I was not available, they, in desperation, wired back "Driver Habibhula Khan" and driver Habibhula Khan was buried with full civil rites, the Mayor, nurses and doctors attending the funeral, and the report said that, in case his relatives wished to visit the grave, it was in a prominent place



and could easily be found. Perhaps you will wonder why he hadn't got an identity disc on, and I can only surmise that he had exchanged this for some other souvenir.

Another incident which occurred on the journey was rather amusing. A mule jumped on to the line after the train had started. Fortunately a whistle was blown and the train stopped, but, in less time than it takes to tell you, four drivers were on the line, had picked up the mule like a bag of gram, and had thrown him back into the truck.

This journey disabused my mind of one well worn contention, *i.e.* that the Englishman is the only man who refuses to know any language but his own. It was very rare to meet a French Officer who could speak English. Later on, when we were returning from Gallipoli, a French Colonel was on board who was liaison officer to Sir Ian Hamilton, (a liaison Officer is a link between the French and English), and, if I had not been on board, there would have been no liaison, as no one else could talk French and he couldn't even ask for a drink in English.

On arrival at Orleans we proceeded to Camp, on a dark foggy night, with no one to shew us where to camp. In the morning however I couldn't find a peg or tent out of alignment, so excellent is the way the drivers do their work.

From Orleans we went to the Front and did both first and second line. Pack mules and carts went up to the trenches every night, and were the best form of transport even in Flanders. This may sound rather astounding, but the reason is that the roads were narrow and muddy and had deep ditches full of water on both sides, and if a lorry or horse wagon got one wheel off the centre of the road and in to the mud near the ditch, it took a Regiment to get it out. The mule transport was very popular in France, and every Officer Commanding wrote in to protest or lament the loss, when we were sent to Gallipoli, and they got A. S. C. transport with horses and big mules instead.



In France of course we were billeted on farms, cottages, estaminets and any place where we could find a roof. The men however preferred their small tents in the wet mud, as they liked to have their fires at the doors of their tents, in preference to living in a barn and cooking some distance away from it.

It was rather uncomfortable for the French people to have their houses full continually and their best bed rooms and sitting rooms occupied, and they generally made a fuss. But as my bearer said "Sahib, they always cry when we arrive, but they always cry when we leave". Thanks to the lashings of rations we got, we were able to help our hosts and hostesses very considerably, and generally had a family rum parade after dinner. The majority of the people we met were of the farmer and artisan class, and the sum total of their command of the English language was confined to the one word "souvenir".

The clothing issued to our men in France was absolutely magnificent. In peace time the Officer Commanding a Mule Corps gets Rs. 25 for a driver's original outfit and Rs. 10 a year to keep it up on—(about enough to pay for two pairs of boots). I am sure no driver of my Corps in France had less than £ 10 worth of kit, as they got warm underclothing, socks, boots, putties, warm khaki shirts, jerseys, mufflers, gloves, fur waistcoats, long coats etc., and of English manufacture, and one of the catch phrases of the men was, "boot, putties, pantaloons, limejuice milgia, little gentleman hogia". You have all seen pictures of the excellent short fur coats, but the mules apparently hadn't, and they wouldn't let the drivers go near them with these coats on.

The only thing we had great difficulty with in France was shoeing. In India very few mules are shod, unless they are working at a trot, and consequently there are, in a Corps, only a very few shoeing smiths and only a small percentage of shoes, so that, when we suddenly found that we had to shoe every mule owing to the pavé roads, we were faced with a serious pro-



blem. Local forges had been denuded for the French Army, and it took some time to get small shoes from England. It wasn't all joy when we did get them, as a large percentage of mules took a violent dislike to being shod, and, as you know, when a mule starts soliloquising, he has some playful methods of telling you all about it.

As soon as the Gallipoli campaign was arranged, we proceeded to Marseilles where we formed a train of 2000 carts, consisting of four cart corps of 500 each. This was an entirely new formation. For the same carrying capacity the A.S.C. would have had at least five officers where we had one. We only had one Officer to each cart corps of 500 carts, so that if anyone was strafed we only had one Officer to 1000. We certainly had an Officer Commanding train, Adjutant and one spare Officer, but the supply was totally inadequate. I was better off in my Cart Corps as 250 of my carts were Indore and Bharatpore Imperial Service, commanded by an Indian Major and Lieut.-Colonel and there were also two British Officers of Indian Cavalry as Imperial Service Advisory Officers, a somewhat curious commando. On this occasion there were no fitted ships available, and so they commandeered any old tramp they could and put in jerry built fittings. They were very slow and, out of our original seven, three were sunk and one was rammed by a French Cruiser. But they landed us safely first, and it was only afterwards bringing up reinforcements that they were strafed, owing to the fact that, at the original landing at Helles and Anzac, the troops only got in about three miles, there was no space to employ all the transport, and only four out of seven ships were landed, the other three returning to Alexandria. This rather broke up our organization once more and we never quite recovered from it. There is nothing the driver hates so much as being separated from his own Corps. You can call him a Cart Corps, Divisional Troops, a Brigade Coy: or a complete turn-out, but all that is darkest Africa to him; he belongs to batti-lumba Mule Corps and his Corps is his home. Nothing can be better than this esprit-de-Corps, but unfortunately a Mule Corps in



European Warfare won't fit into a Brigade or a Division, and consequently there is a lot of heart burning, when men are separated from their Corps.

Before we left Marseilles Col. Sir Walter Lawrence, who was at one time Private Secretary to Lord Curzon when he was Viceroy, brought the Duke of Teck round to see our train of Cart Corps and our ships before we sailed. At that time Sir Walter Lawrence was practically liaison officer to the King and had a roving commission to report to the King all matters of interest concerning India. He personally thought that we were going to land at Smyrna and he was anxious to know how the men liked the idea of going to Asia Minor. The Officer Commanding Train, Col. Beville, had only that morning asked them that very question and explained where it was, and an Indian Non-Commissioned Officer replied that, as the War must have cost the Sirkar many lacs of rupees, he supposed they would have to walk back from there to India, but they didn't mind which way they went. Sir Walter Lawrence was highly amused and promised to tell the king.

Three ships that had returned from Helles to Alexandria, went up for the Suvla landing, and it may interest you to hear of the bandobust for getting the transport ashore and ready to move, as soon as the troops landed. There were 4 holds in the ships, and as many carts as possible were parked on the hatchways complete, the balance of course being in the holds with their wheels and raves off. By these means we were able to sling complete carts into the lighters and a pair of mules were slung together with their harness on, and five minutes after the boat touched the shore the transport was available to take up water, ammunition etc., to the Firing Line.

The total casualties which our train suffered in Gallipoli were 1000 men killed, wounded and evacuated sick (and there were very, very few sick) and 2000 animals killed, wounded and sick. As one driver said at Anzac. "Sahib it is very difficult to keep alive here. Bahut taklif". Considering that there was not a yard of ground at any of the three places which was not under



shell fire or sniped or both, the casualties were astoundingly few. At Helles our mule lines were under shell fire from three different directions, one of which was from the Asiatic shore, directly in rear of Helles. By some extraordinary dispensation, whenever a shell arrived which cleared the feeding troughs and lines, all the mules were out on duty or down at the beach at water. At Anzac most of the losses were from machine gun snipers and rifle snipers, some of which were caught within a few hundred yards of our lines and dugouts. Water was terribly scarce, though the C.R.E. said water must be plentiful, as he had seen officers cleaning their teeth in different water to what they shaved with. Our mules could only be watered once a day, but we very soon dug our own wells and improved that.

At Suvla we were out of rifle range, but we occasionally had a pyrotechnic display and we had some very big shells into our lines. One 5-9 H.E. shrapnel killed and wounded 111 mules and 15 men. It sounds a tall order, but it is nevertheless a fact, which was considered sufficiently important to be wired Home to the War Office, the only occasion the Train, as a train, was mentioned in despatches. In this one particular spot on Lala Baba Hill, we lost in 3 days 225 mules killed and wounded out of 350 and we then proceeded to dig the remainder in. One driver, who was badly wounded on that occasion, was shot through the stomach and quite realised he was certain to die, said good bye to all his pals and was carried off to Hospital. He was very plucky and the Doctor took a great interest in him. Much to his surprise, he was still alive two-days later, and so he decided to give him every chance by putting him on a Hospital Ship and went down to the beach to see him off. The driver had been very fussy about all his kit being put on the stretcher (no doubt he saw visions of returning to the ten rupees a year allowance) and on the way to the beach he sat bolt upright and said "Kidher hai hamara dusra puttee".

We at first thought that the Anzacs might ill treat our drivers as they don't care much for the native in their own



country. We were therefore agreeably surprised to find the driver had been christened "Johnny" and there was tremendous camaraderie between them. I put it down to the fact that "Johnny" was as brave as the Anzacs themselves, and when one has said that, there is nothing left to add. One Commanding Officer of a Regiment went so far as to write in and say that, if Naick Mohamed Din came out of hospital, he hoped he would be returned to his unit, as he was a popular member of their Corporal's mess.

Shortly before the evacuation we had three absolutely appalling days of hurricane, rain and frost. Trenches and dugouts were flooded, tents blown away and it was almost impossible to stand up, and no ships could come near. The water, after flooding everything, then added to the indescribable misery by freezing, and in the next ten days I believe I am right in saying that over 10,000 men were evacuated from Suvla. Hundreds died of exposure and the trenches were untenable. Every scrap of shelter, dugouts, supply depots etc., were overflowing with men suffering from trench feet, frost bite etc. We had a small hospital in our lines for our own men and put up 100 cases, as our men were so fit, well clothed and well fed, that they were able to stand even these hardships, and we only had six men in hospital during this time out of twelve hundred, and several of these had fallen off their carts frozen and the mules had come back to the lines by themselves.

We did the whole of the transport work of 3 Army Corps, one of which had five Divisions but, as the trenches were only 3 miles or so from the beach, we were able to do it with double trips every night.

At Suvla there was a Brigade of Yeomanry, who were of course acting as Infantry, and in the second big attack they were in the forefront of the battle, and suffered heavily. On this occasion two of our carts were used to carry machine guns and so splendidly did they behave that, on the recommendation of the late Major Leslie Cheape, each man got an I. O. M. Sir Ian Hamilton asked Leslie Cheape what impressed him most



at Suvla and he replied "the Indian Mule driver and the stretcher bearer."

In our line at Suvla we dug the finest well on the Peninsula. The Water Diviner selected the spot and we had to get through 30ft. of solid rock. When it was ready, the pump had to be built into the sides half way down. It eventually gave 15000 gallons a day, and it was made by the drivers with picketting pegs and hammers, working day and night. Our British Non-Commissioned Officers in the Supply and Transport Corps have to be master bakers, so at Suvla we were able to put up a small field oven and provide General Sir Julian Byng and his staff and ourselves with rolls and buns, and, to compete with the appalling cold, our mistries made stoves with funnels, to keep the dugouts warm.

One hears all sorts of fairy tales about the evacuation, that we paid the Turks to let us go and that they knew we were going, etc., etc. Absolute bunkum! The evacuation of Suvla was so splendidly carried out that one couldn't even see it was going on, when one lived 300 yards from the main beach. Orders were issued for "business as usual". Fires and incinerators were to be kept burning, tents were to be left standing, tarpaulins were to be left on dugouts and, as the order concluded, "even the proverbial British custom of walking on the sky line will not be entirely dispensed with."

On the last night of all, 50 carts were sent up to the trenches for the purpose of squeaking only. We could never get anything at Suvla out of the Ordnance Dept., and consequently grease was at a premium, and, if you have ever heard the pathetic squeal that an A. T. cart gives when it is screaming for grease, you will realise how necessary it was to assure the Turks that the convoy was running as usual. The carts were abandoned, but the men and mules caught the last bus, and the last man was away before daylight. A terrific bombardment on land, as the ships were getting clear, only too conclusively proved that the enemy hadn't found out that we had gone. We were not however at the end of our troubles even when we were clear of



the enemy's guns, for some of the mules had to be unloaded at the Island of Imbros, which was Army Head Quarters, and, as there was no pier available, they had to be pushed into the sea and swim ashore, with the Navy Picquet boats chasing them round to keep their heads in the right direction. Even then they weren't safe, as a flying machine came over next day and dropped bombs and wounded one of our officers and strafed over 100 mules.

With the exception of 400 complete turnouts, which we sent away at once to Salonica, all transport eventually found its way to Egypt and, in the peaceful sands of Ismailia, we once more sorted ourselves out and the men and animals had a well-earned rest. Not for long though, as we then got orders to form a train of 1000 carts for a Division in Mesopotamia, and after being inspected by the Commander-in-Chief, General Sir Archibald Murray, and by General Birdwood, we were soon on our way to Suez for Basra.

Once again we found ourselves in a country where there are no roads. It is a peculiar feature about Mesopotamia that the country is as flat as a board, and there is not a stone in the whole country of any kind or description, so that roads, such as they are, can only be made of the local mud, strengthened where available with brushwood. There is also not a stick of wood in the country except date palms, and they only extend for a certain distance up the Tigris and are too valuable to be used for roads and railways, and the Engineers have to go back to the primitive customs of the mud age. A heavy shower of rain, and the whole camp becomes a jhil, and one requires a pair of stilts to move about. We marched all the way up to the front in what is called an echelon. It was six miles long and took two hours to get out of camp. I was in command of it for over a month, and had to rely on Arab guides and was handed on from one to the other. The country was so swamped at this time, May, that on one occasion we only advanced five miles in eight hours and the echelon, which had left a week before, had an even worse time. Taking it all round, it is a fairly poisonous



country, because if the ground is wet it is impossible to move, and if it is dry the dust is too blinding for words.

Rifle thieves were the only trouble we had and they were very successful, as the majority of troops were British and not able to see in the dark as a native can. We caught one and gave him the benefit of being hung publicly in Amara, but it didn't stop it, and I am afraid that, even after the War, it will always be like the frontier of India as regards rifle thieves.

One very interesting event occurred on the march up, and that was the arrival in our camp of the Russian Cossacks at the end of of their wonderful ride. The Political Officer was expecting them the day I got into Ali Gharbi, as a runner had come in from the Hills with the news. He gave them up however at dinner time when it got dark. Fortunately for them, we had a brain wave at dinner and remembered that the Political Officer had said that they were coming in to get topees. So we immediately thought that they would travel at night and sent round urgent orders that no sentry was to fire at anything that night, (there was usually a fusilade, with jumpy sentries and stray mules and dogs) and at 10 o'clock in they sailed, in the pitch dark, 150 Cossacks and five officers and absolutely no transport whatever. Possibly there were two pack horses, but in spite of this and the tremendous distance they had travelled, the officers were in spotless kit. Being very hot we were in shorts and shirts, and they were in thick winter frock coats, white cloth waistcoats and astrachan hats, and looked as if they had just stepped off the Hippodrome stage. Only one could talk French, so that, when he wasn't present, it wasn't particularly chatty. However it didn't take long to discover that the officers all wanted a whisky and soda and dinner, and the men and horses a square meal, and the British units were soon out of bed and cooking a meal for them. After this they formed a ring and sang Russian folk songs in parts, and it was one of the most beautiful things I have ever heard. They remained at Ali Gharbi for some



time and eventually returned with their topees. But apparently red tape is as bad in the Russian Army as in our own, for the Captain Commanding wouldn't let them wear them, as permission to do so hadn't arrived from General Baratof before they left.

When we finally got up to the front, we were employed on convoy work up to the Sinn position, and this stunt was one of the worst we ever had to do, as it meant being in the saddle from 5-0 in the evening until 8-0 the next morning, with perhaps two hours in the middle of the night to unload. Fritz came over several times and tried to strafe the returning empty convoy, and managed to hit it once or twice, and one night the convoy was attacked by Arabs who got away with several carts in the dark and killed some of the escort. Except for the last two months I was there, when I was on Line of Communication, the transport was overworked and at one time the men were getting about three nights a month in bed. The convoy road was wide enough for 10 carts abreast and about 800 carts usually went, but the dust was so appalling, that only one line was visible, and the men wore their gas helmets or sun glasses, and pagri cloth over their mouths. As a rule the wind blew from 9 a.m. until 5-30 p.m. and, during that time, it was impossible to cook or eat anything. Animals could only get grain, as bhoosa was blown away if put down, men's tents were like dust bins, and one's own like a vacuum cleaner. The river bank is the only possible place to be, and we were a mile away, and it is none too merry and bright even there, when the wind blows the wrong way. Our men however stuck it once more like tigers, and they were very seriously ill before any of them would go to Hospital, and, when I left, there were still five draught troops out of the original six complete, after nearly  $2\frac{1}{2}$  years. The pack troops however, which we had left in France when we went to Gallipoli, were scattered to the four winds.



It would be difficult to go on service with a better billet than Commanding a Mule Corps. It is absolutely independent in every way, and no trouble to any one. A Corps has its own medical man, veterinary Assistants, farriers, blacksmiths, carpenters, saddlers and bellows boys. The men are absolutely fearless and devoted to their mules, and, as long as they are kept together as a Corps with their own Officers, British Non Commissioned Officers and Indian Non Commissioned Officers, they will stick anything.

It would be invidious to draw a comparison between the work of the Army Service Corps and Supply and Transport Corps, but having spent my service in both corps I may be considered reasonably neutral. As a matter of fact it is not a comparison of the two corps transport work that I desire to mention but the fabulously liberal methods of War Office Administration in comparison with the cheese paring Indian Administration. No doubt some of you will remember that, early in the War, an explanation was called for in France by the War Office regarding a slight discrepancy between ration issues and effective strength of about a million rations. The reply from Sir William Robertson, at that time Quartermaster General, was something as follows. "There have been no cases of stealing or selling rations, none have fallen in to the enemy's hands, even on the retreat from Mons, so can only conclude they are in the men's stomachs, which I consider quite the best place for them".

It would require a Bruce Bairnsfather suitably to illustrate Delhi shaken to its new foundations by the arrival of such a high explosive bomb shell, in those happily vanished days.

The rations in France were luxuries not rations. In Mesopotamia this time last year, rations were a matter of arithmetic. Full rations we will say weighed 200 tons a day and the boats available could only carry 150. As one wag said at the front "I got something in lieu of rations but nothing in lieu of lieu". I will gloss over Mesopotamia



as things now have very greatly improved and the arithmetic sum has been solved owing to the fact that the Army Service Corps, in this War, has been in the position of the man, who said in a heated argument "I'm not arguing, I'm telling you" and they got every thing on demand from the War Office.

In conclusion I would like to advise anyone, who is going out to Mesopotamia, to take a fishing rod, a gun, plenty of cartridges, a supply of polo sticks and balls and a tennis racquet and shoes. It may sound a curious addition to an 80 lbs. Officers kit, but I can assure you that a rod and gun make you very popular in a mess and almost anywhere a polo ground can be made, and, when I was at Amara, we had 12 chukkers in an afternoon, and the Divisional Commander and two Brigadiers and most of their Staff all played.

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## **THE PEACE ORGANIZATION OF BATTALIONS (BRITISH INFANTRY).**

BY

CAPTAIN G. N. MOLESWORTH  
PRINCE ALBERTS' SOMERSET LIGHT INFANTRY.

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As is only natural many alterations have been made in the Organization of British Infantry Battalions since the declaration of War in 1914. Those responsible at the War Office have seen fit to withdraw Machine Guns and replace them with Lewis Guns ; to arrange for Bombing personnel and make other changes and additions of a kindred nature. It is noticeable however that most alterations are the outcome of lessons learnt during the War, and directly concern the Fighting organization of the Battalion, as distinct from the Peace organization. This may be due either to the fact that the Peace organization of the Battalion works sufficiently smoothly to need no modification, or else that the authorities have looked so long upon War, that other considerations have got rather out of focus.

The Military situation in India is at the present time, and indeed has been since the declaration of War, highly paradoxical. India is at War and yet at Peace. Whereas in England the War is at the very door and every thing is oriented to that primary consideration, in India conditions are entirely different. In the same commands, almost in the same stations, are units on a War footing, cheek by jowl with other units, which still support with difficulty the ignominy of an enforced peace. Thus in India one has the opportunity of viewing War and Peace conditions side by side, while in England the "Fog of War" obscures a clear vision.

Before proceeding to examine closely the operation of the present 4 Company Organization, it will be as well to review briefly the considerations which brought it into being.



The System only came into force in England in October 1913. That is to say it had only been in working order for a year before the outbreak of War. This is an important point as will be seen later.

Now Peace, looked upon from the point of view of the professional soldier, is but a valuable period of recuperation between two wars—a period of recuperation but not of rest. It is essentially a period of Training and preparation for a coming campaign. The years between 1902 and 1914 were such years of recuperation, but, with the passage of time, Training became increasingly difficult to carry out. As the glamour of soldiering, instilled in the mind of the people by the Boer War, gradually faded and the country resumed more of its pre-war prosperity, so recruits became more difficult to obtain. It is obvious that one cannot carry out Training without men, and, as the years passed, this became more and more apparent under the existing system.

Between 1908 and 1912 the need of men to stiffen battalions at Home began to be acutely felt. Many Units were under strength owing to poor recruiting and their ranks were further depleted by the discharge of men serving on short terms of enlistment. The requirements of Battalions on foreign or colonial Service were also a heavy drain on the Home Establishment. Thus during that period it was difficult to obtain more than 500 or 600 men per unit for Battalion Training Camp or Manoeuvres; which means between 40 and 50 Rank and file per company. Company Commanders were not slow in submitting their opinion that the carrying out of Company Training with such small companies was little more than a farce. Accordingly something had to be done to obtain more men for Training and after many representations on the subject, the 4 Company Organization was instituted and took the place of the 8 Company organization in Battalions. Whatever other economic or tactical considerations may have played their part



in the institution of the new organization, it must be remembered that the primary consideration was the need for more men for Training.

The new System, however, produced no increase in the actual number of men available: it merely regrouped them for Training purposes. Thus, although the Company Commander found himself with a Command worth having, the Battalion Commander could show no increase in his numbers on parade.

The new System was hailed as a panacea for all ills, and in the general chorus of acclamation the main object of its institution seems to have been obscured.

As has been already mentioned, the system had been in working order barely a year, before War broke out. This period was not long enough to test and bring out its good or bad points. Company and Battalion Commanders could have scarcely had time to form opinions on its merits or defects in time of peace. Mobilization in 1914 brought an influx of Reservists and others to the Colours and saw Units placed upon a War footing. The succeeding 6 months saw the flower of that fine Army swept away, and with it perished most of those officers who were qualified by experience and service to give an opinion on the working of the new organization under Peace conditions.

There appears to be no doubt that the system works well in war, else it had been modified long since. But few officers now serving in the New Armies at Home have any experience of soldiering under Peace conditions. Moreover Units in England are now on a War footing, and those trials and tribulations which fell to the lot of pre-war company commanders are practically unknown. Thus it is unlikely that any defects of organization will be brought to light by Units at Home.

It may be taken as axiomatic that a Military Organization should be designed primarily for War: but any such organization, if it is a sound one, should work equally well under either Peace or War conditions. I have endeavoured to show that the 4 Company organization although it may have proved sound in



War, has never been fully tested in England during Peace : and that in the present circumstances it is unlikely that it will receive such test for some time to come. But in India, as has been already pointed out, conditions hardly distinguishable from Peace exist, and have existed up to the present time. Thus a period of 3 years has elapsed during which there has been ample time to study the 4 Company organization, and to observe its defects, if any.

Before proceeding to examine the working of the organization in India, it will be as well to restate our main thesis, namely that if War is the time for fighting, Peace is the time for Training; and no effort should be spared to train the maximum number of men up to the highest standard of efficiency during time of Peace.

A Battalion in India is trained under very different conditions, from the point of view of numbers, to a Battalion at Home. Foreign Service Battalions are kept up to War Establishment by Drafts from Home and therefore theoretically should never be short of men. Yet in spite of this and in spite of the introduction of the 4 Company organization, Company Commanders are always short of men for Training. Whether the particular training be Company, Battalion or Brigade, there is always a difficulty in getting men.

The influences which draw men away from the essential duties of training may be classified generally under two heads—

- (a). External influences, *i. e.* those outside the Battalion.
  - (b). Internal influences, *i. e.* those within the Battalion.
- We will deal with each of these in turn.

**EXTERNAL INFLUENCES.**—There is no doubt that a very high value is placed on the services of the British Soldier in India, be he Non-Commissioned Officer or Private. He is in demand for countless “jobs”, of civil as well as military natures. Since the outbreak of War the demand for Non-Commissioned Officers and men has increased two or three hundred per cent. Below



are a few of the chief duties for which men are required.

|                             |                             |
|-----------------------------|-----------------------------|
| Instructors ( Various ).    | Nursing Orderlies.          |
| Signal Companies.           | Telegraphists.              |
| Machine Gun Corps.          | Duties in Clothing Facto-   |
| Duties on Transports and    | ries.                       |
| Hospital Ships.             | Storekeepers.               |
| Railway Duties.             | Duties on Dairies and Grass |
| Mechanical Transport Du-    | Farms.                      |
| ties.                       | Clerks.                     |
| Inland Water Transport R.E. | Detention Barrack Staff.    |
|                             | etc.                        |

The drain on Non-Commissioned Officers and men for these several duties is very severe. It is not contended that the 4 Company organization is responsible for it. This is a time of War and it is only natural that men should be required, and only right that they should have the opportunity to distinguish themselves in other spheres of usefulness. Yet, as being one of the chief causes of loss of men from training, this external influence must be touched upon. The introduction of Garrison Battalions and the receipt of large Drafts from Home have gone a long way to fill vacancies so caused. Yet it must be remembered that the Non-Commissioned Officer and men so taken are picked soldiers, and an inferior article has to be trained to replace them.

We now come to our second heading namely

INTERNAL INFLUENCES. "War Establishments" show the strength of a Company at 221 ranks, and 200 ranks are necessary, if pay for a Company Clerk is to be drawn. Thus on paper it appears that a Company Commander should have ample men available for Training. But in actual practice a very different state of affairs is found.

Firstly, his best Non-Commissioned Officers, who should assist him have probably been taken for duties mentioned above. Secondly, among the men on the Company Book will be found a large number who are seldom available for parade. These absentees may be grouped under the heads of "Garrison, Regimental, and Company Employ."



"Company Employ" consists chiefly of Clerks, Storemen, Cooks. etc.

Under this head as well we must reckon various fatigues which are detailed daily and which require men.

These are roughly Bungalow Sentries, Mess Orderlies and Ration Parties.

"Regimental Employ" comprises,

|                         |                           |
|-------------------------|---------------------------|
| Bandsmen.               | Adjutant's and Quarter    |
| Buglers.                | Master's Clerks.          |
| Signallers.             | Storemen.                 |
| Quarter Guard.          | Musketry Staff and Perma- |
| Regimental Transport.   | nent Markers.             |
| Pioneers.               | Armourers Assistants.     |
| Tailors and Bootmakers. | Employees in Officers and |
| Conservancy.            | Sergeants Messes.         |
| Men employed in Regim-  | Police.                   |
| ental Institutes.       | Orderlies.                |

etc.

At most Indian Stations a certain number of men are employed on what are known as "Garrison Duties."

These are chiefly—

|                            |                            |
|----------------------------|----------------------------|
| Clerks in various Offices. | Detention Barrack Warders. |
| Nursing Orderlies.         | Cantonment Conservancy.    |
| Garrison Guards.           | Orderlies.                 |
| Garrison Military Police   | etc.                       |

Now the Company Commander is responsible for the pay, clothing, messing, training and discipline of all these various men.

To illustrate the difficulties of his Administrative duties, first let us suppose he wishes to parade the men of his Company for the purpose of fitting a new issue of Clothing, or inspecting an issue already in use. He must select a time for the parade which will not interfere with Band, Bugle Practice Musketry, Signalling or issue of rations. If he withdraws men without due notice from their various Regimental employments he at once throws out of gear the Orderly Room and Quarter



Master's Departments, and causes considerable friction throughout the entire Battalion machine. If he requires his men on Garrison Employ, he has to give at least 24 hours notice to their various superiors. The general reply to such notice is that the men cannot be spared; but if they are allowed to be present, it is invariably pointed out that it is only as a favour and causes considerable inconvenience.

The difficulties of administration apply with equal force to training. In the case of Company Training or Musketry, all those men, whether on Company, Regimental or Garrison Employ, have to be relieved by men from other Companies. Thus the Company "Struck Off" obtains its men at the expense of the remaining three. When the period of Battalion and Brigade Training comes round, these employed men cannot be relieved, and most of them evade such training altogether. Thus we see that in the execution of his duties, whether administrative or instructional, the best efforts of the Company Commander are frustrated by the system.

Although lists have been given of the main forms of employment of soldiers, nothing has been said about the actual numbers of men so employed. Yet the ratio of "Employed men" to "Duty men" is very high. In a large station in India, taking into consideration "Employed Men", "Guards", and "Sick", it is seldom possible to obtain more than 60 men per Company for Training, unless the Company is "Struck Off".

We have already seen that by "striking off" Companies and relieving their employed men by men from other Companies, nearly every man in the Battalion fires his Annual Course of Musketry, and a fair percentage is present for Company Training. But throughout the remainder of the year the Company Commander never sees his "Employ", and their Training in consequence falls below the required standard. Yet, should the Battalion be mobilized, all these men would return and the Company Commander would have to deal with a large number of only partially trained soldiers. If the Company Commander is to command his men in War, it is only fair that he should have



every chance to train them in Peace. Moreover if a man is to be employed as a soldier in War, where his life and the lives of others may depend on his Military knowledge and skill at arms, it is hardly short of criminal to employ him on some sedentary duty in time of Peace. Both Officer and man are deserving of better treatment.

Another cause of trouble to Company Officers is the increasing tendency to train each man as a specialist. Each particular expert requires the most intelligent men he can get. No doubt the specialised form of Warfare now waged in France requires all these various experts. But it is small comfort to a Company Commander, doomed to fight on the North West Frontier, to have all his best men taken to be trained as Bombers, Lewis Gunners, Stokes Mortar Experts and in other subsidiary side-shows ; while he is left with a very doubtful residue to carry out the essential duties of the Infantry soldier.

For every evil in this world there is a remedy—generally more than one—if it can be found. It is a moot point whether the Battalion organization is at fault, or whether some root principle of our military system is unsound and thus responsible for this lack of men for training. As has been said previously, the introduction of Garrison Battalions should be of material benefit. These Units will no doubt deal with the question of supply of men for duties discussed under the head of " External Influences ". But if training is to be successfully carried out, something must be done to relieve men from economic duties within the Battalion. There may be many ways of doing this, but the method here suggested is to introduce a fifth Company. It does not particularly matter whether it be called " E " Company, Headquarter Company, Depot Company, or by any other name. For the sake of clearness we will refer to it in future as " THE 5th ECHELON ".

The first thing to consider is the composition of the 5th Echelon. It should contain all men whose duties are connected with the interior economy of the Battalion. That is to say those who come under the headings of " Company, Regimental



and Garrison employ". Since the beginning of the present war a system of monthly medical examinations and classification of all ranks has been instituted. All men in certain "Categories" who are classed as unfit for Active Service are transferred at once to Garrison Battalions. Yet surely valuable work might be found for some of these "Crocks" in the 5th Echelon. These men might easily carry out the duties of Cooks, Conservancy, supervision of Institutes, etc, which are now performed by able bodied fighting men. The duties of Bungalow sentries, Mess orderlies, storemen, targetmakers, and similar sedentary work could be carried out by them, and others, who are sound, released for training. There is no reason also why men of this type should not perform Regimental Quarter Guard duties. It may be argued that to put men who are unfit for hard work on Guard, will mean the introduction of slovenliness into the performance of Guard duties. There is no particular reason why this should be; and on the other hand the employment of such men would be of material benefit, by relieving trained soldiers for more essential work.

Bandsmen and Buglers who become stretcher bearers on Service; regimental police, Signallers, pioneers and clerks, all of whose duties are not connected with actual training in Companies could be included in the 5th Echelon.

It will be seen that among the men thus earmarked for the new formation, there are both combatants and non-combatants. It will therefore be necessary to divide the Echelon into two parts.

- (a). Those men who go on Service with the Battalion.
- (b). Those who do not.

For the sake of reference we will call these Divisions A and B respectively.

Thus the composition of the 5th Echelon would be roughly as follows:—

**DIVISION A. (for service on mobilization).**

|           |                                  |
|-----------|----------------------------------|
| Band.     | Company and Orderly Room Clerks. |
| Buglers.  | Battalion Staff.                 |
| Police.   | Signallers.                      |
| Pioneers. | etc.                             |



DIVISION B. (for Depot on mobilization).

Cooks.

Conservancy.

Storemen.

Employees in Institutes.

etc.

In addition to those already mentioned, there are two other classes of men whose names are borne on the books of the Battalion and who are a source of trouble. These are

(a). Non-Commissioned Officers of the Indian Unattached List and S. & T. Corps.

(b). Non-Commissioned Officers and men of other Corps on Furlough, Sick furlough, temporary duty in the Station, etc., and attached to the Battalion.

Most Units have already instituted "Attached Sections" or "Detail Companies", to deal with these men. This is not altogether a satisfactory solution of the problem. These men could be more easily accommodated in Division B of the 5th Echelon.

Thus the new formation would contain, in addition to the economic staff of the Battalion, all those men employed on various duties, who are not required for training and who merely impede the Company Commanders in the execution of their essential duties.

Having thus roughly sketched the composition of the 5th Echelon it remains only to provide a Commander and Staff. The men of the 5th Echelon will require no training and therefore the duties of the Staff will be solely administrative. That is to say they will be connected chiefly with the payment, clothing, and messing of the new Unit. In this case, since the duties will not be arduous, there is no reason why Non-Commissioned Officers should not be provided from among those classed Unfit from time to time, and who would ordinarily be transferred to Garrison Battalions. With regard to a Commander, the choice naturally falls upon the Battalion Second in Command. This Officer, as the Commanding Officer's "Alter Ego", chiefly spends his time in waiting hungrily for his superior either to



die, be invalided, or go on leave. While the Commanding Officer is present his duties cannot, by any stretch of the imagination, be regarded as arduous. His chief care is the supervision of Regimental institutes and accounts. But as all his assistants would be in the 5th Echelon, it would simplify matters were he in command.

So far as Mobilization is concerned the 5th Echelon would provide the Administrative nucleus on which the Depot could be formed: and would thus save a great deal of labour which is at present necessary.

In this survey of Battalion organization I have endeavoured to restrict criticism to the broader aspects of the case and to avoid any confusing detail wherever possible. All criticism to be of any value must be constructive, otherwise it sinks to the level of mere iconoclasm. For this reason I have roughly outlined a scheme for the remedy of those defects which appear most serious. It must not be imagined for a moment that it is a new idea, for it has been several times put forward in various guises. Yet there is no harm in restating the case at this time.

Whether this scheme be sound or not, the underlying facts of the case cannot be denied; namely, that men who should be spending all their time and energy in training for War are instead wasted upon duties which in many cases are the reverse of soldierly. In nearly every case I have carefully rejected the aid of figures or statistics to illustrate any points. There is no need to declare "the nakedness of the land" to all and sundry. Yet the study of most Battalion and Company parade States, will furnish much food for thought.

It is impossible at present to forecast any changes in Battalion Organization which may take place "when the War is o'er". Yet there is no doubt that sound men will be at a premium. Hence there will be further necessity for the employment of "Unfits" wherever possible. Expense also will be a predominant factor, and although the establishment of a 5th Echelon would increase the number of men per Bat-



tion, yet money so spent would probably prove a sound investment and no extravagance.

Whatever other lessons the present struggle may have taught us, it has surely proved that a strong Army and Navy are a Nation's best guarantees for Peace; and that no money or energy expended in their training can be considered wasted.

A consideration of the remarkable performance of the British Army, during the retreat from Mons and after, opens up two main lines of thought. Firstly, astonishment that an Army, composed as it was very largely of Reservists and only partially trained men, could have done so well against such odds. Secondly, speculation on the possible achievements of an Army whose fighting men are always free for training and nothing else during time of peace. The experiments with the "Spectator Company" foreshadowed what might be expected from soldiers thus relieved from the cares of economic duties. In his book, "The Army of a Dream", Kipling foresees some much development. Will it for ever remain the vision of an idealist, or shall we some day dream it true?



## **"CONTEMPTIBLE" TACTICS.**

BY

CONDUCTOR H.C. PARKS, I.M.L.

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It is human nature to jump to conclusions—and there is no harm in it, if they be right conclusions. But as disaster usually waits on early wit, so hastily formed opinions are generally wide of the mark. Let a thing be shown to be a little wrong, and we are inclined to condemn it altogether; the bruised side of the apple being presented to us, we conclude the whole fruit bad, and thus judge the invisible much from the little in view.

This thought sprang from a perusal of a recent article by the "Military Correspondent" of a daily newspaper. In effect it seemed to say that he had come to the conclusion, after a close study of the methods of fighting in Europe at the present time, that all professional pre-war training goes for naught; so profoundly modified have the principles of Strategy and Tactics become, that our text books are of as much practical use as the observations of the astrologers; and that a staff college certificate is just the thing that is not required in those, who the nation demands, should hew a road to victory in the Great War now being waged. His burden appeared to be that, since you cannot teach an old dog new tricks, our leaders should be picked from those who had started in the Great Game no earlier than August 1914.

A little knowledge may be a dangerous thing; but here you have the *obiter dicta* of one who has apparently imbibed more than a "shallow draught". The "little" of a subordinate, therefore, may well ask for a hearing, in the hope that his remarks may be "so like sense 'twill serve the turn as well" !

It is true that tactics perpetually change—according to Napoleon, at least once in ten years; and no one will contend that the methods employed to reduce 'Troy would succeed against the modern forts on the Rhine. But there are tactics within tactics, the inner being the bases of the outer, the root principles which change little in a decade. And tactics cannot be divorced from



strategy, the fundamental principles of which remain immutable. Underlying all concerted action is some definite plan or idea. Strategy is the plan, and tactics the methods by which that plan is translated into action. Tactics being thus the handmaidens of strategy, both are necessary to the right conduct of war. But though complementary, they may, like oxygen and nitrogen in the air we breathe, be resolved into their constituent parts for the purpose of examination. While Strategy is not susceptible to change, can it with truth be said that the war has so "profoundly modified" the root principles of tactics, as to render our text books obsolete, and those versed in them incompetent? To that question the answer is obvious.

If a new Adam was born into a new world, he would have to begin exactly from the point where the old Adam began. The world is progressive; we build on the work of others. It is not sufficiently remembered that there is no science applied to the operations of this war, which was not built up gradually from knowledge acquired during long ages. Air warfare may be a novelty, but it has become possible only as the result of a long history of deep thought, followed by careful calculations and experiments. It is new in its application but old in its conception. We are not surprised at it. A balloon, the precursor of the battle-plane, was flown in 1784; while "*Rasselas*", written many years previously, contains an interesting chapter on the art of flying, in which a character declares, with curious foresight, that "only ignorance and idleness need crawl upon the ground". The 15-inch howitzers are tremendous but not surprising when we reflect that guns were used at Crecy; and were high explosive shell and searching fire entirely unknown at the beginning of the present century? The military student in peace was prepared for one and all the developments which characterise this war. Precepts were not wanting, though we had to wait for the war for some examples. Surely, he is the better for the inculcation of those precepts?

The science of war is not an easy study: there is no royal road to its acquisition. We must tread the long way



of military history before we can be considered qualified to practise in it. Soldiers, like lawyers, doctors, and the "ists", and "icians", are caught young. The military as well as the civil professions are moving with the times; and only those who have served long apprenticeships and have traced the development of their trades can rightly appreciate and adapt themselves to the ever-varying vicissitudes. Geniuses there may be, but they will generally be found to be those with "an infinite capacity for taking pains" in their work, to which the best years of life have been devoted. In the military world Sherman and Johnston might be cited—as examples to prove this rule. And will not admiration for natural abilities allow that even they would have done better, if they had known more? Napoleon, Wellington, Marlborough, Cromwell, Charlemagne, and all the "lights of the profession" were old soldiers who realised early in their careers that the best leader is he who has acquired the priceless power of looking ahead by having looked back. In essentials, the future is but the reflection of the past.

Our military schools and colleges have taught the root principles of tactics, illustrating these by innumerable examples drawn from the world's fruitful history of war, or from the realms of military probability; and no reasonable being can deny the absolute and imperative necessity of this teaching or its incalculable benefit in our colossal army of mushroom growth.

Let mere untutored boldness be permitted to indicate, however crudely, a few of the "roots" embedded in the minds of our "contemptibles" when they took the field. To begin with, has the war in any way modified the ancient tactical principle which lays down that action must always be influenced by the armament possessed by the enemy? Does this not apply with equal force to bows and arrows, catapults, poisoned darts, stone shutes, magazine rifles, 9-5 guns or aerial torpedoes? And will the doctrine, which enjoins on a leader to concentrate his strength on the enemy's weakness,



wherever found, not stand repetition? Or that, notwithstanding the development of rifle and gun, the broad principles of attack are scarcely affected? Frontal attacks (as the Germans can testify) can succeed only by an extreme prodigality of life, and seldom even then. While as regards defensive positions, whether forts, earthworks, or trenches, they remain as of old the natural game of infantry: they may be had at a price. That price varies in inverse ratio to the number of shells previously rained on the objective. As in the past, too, the main business of artillery may still be compared to that of John the Baptist—to prepare the way. Unlike little boys they must be heard and not seen; and to be heard with effect they must work in close harmony with infantry.

All this is ingrained in the fibre of the old professional soldier. Long training and plentiful experience have developed in him an “instinct” which guides his operations and governs his tactics—which tells him, for example, that the wisdom of the counter attack depends on time, place and the dispositions of the enemy, and that the best opportunity may come immediately, to-night, at dawn, or the week after next. That same sixth sense also makes him act on the principle that the counter attack is always right when it does not sacrifice the substance to the shadow. Is he an anachronism for it? or for knowing that the offensive is not necessarily the initiative and not always good tactics, and that a penny-worth of ground may be too dear at a pound? Has this war newly taught him that co-operation, co-ordination and intercommunication at all times between every part merely expresses the old proverb: Unity is strength? He not only knew it before, but, what is more important, knew how to effect it in the most workable way. Aircraft in this connection, has merely made his task easier. It is just the difficult application of the unchangeable principles of tactics that makes his pre-war training in college and camp, in Africa, India or the Far East of such inestimable value at the present time. It is not the Boches but the Boers who taught him the virtues of concealment; not Fritz, but the Afridi the fine art of sniping. He will



### ***Contemptible Tactics***

not prepare a 'special idea' without providing for such a contingency as an enemy 'special idea'; and when in doubt he will reconnoitre; for he knows that time spent in that is seldom wasted. He does not need to be told that the basic principle of war formation is requisite width with necessary depth; he extends his line to meet the enemy's line, and he provides reserves to repair wastage. He has been taught to attack, to provide against attack, and, whether acting on the offensive or defensive, to direct his tactics to the enemy's continual hurt; to fight him here, to fright him there, or to out-manoeuver him in the other place; that it must be all war and no peace until the final victory.

Is it for the knowledge and application of these and such like principles that the professional is a 'back number'? Is he the worse for insisting that fire discipline is at once a life and death business—this to the enemy, that to his force; for ordering his advanced guard to feel and his rearguard to fight; for laying down that the bullet is for sight and the bayonet for night; for striking unexpectedly at the vital point with all his power; for being relentless and 'regardless' in pursuit; for having acquired the knack of writing clear orders; for deigning to learn from the enemy, savage or "Kultured"?

To proceed is but to labour the point—and to tax both reader and writer! The truth of course is that the professional is in his natural element in this war; and as a man of "principles" he commands universal admiration and respect. *Cuilibet in arte sua credendum est.*

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## **"EAST AFRICA"**

BY

CAPTAIN H. L. WOODHOUSE, M.C., R.E.

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The chief impression left after two and a half years in East Africa is that of an enormous country, with a tiny white population. The lack of communications increases the impression of size, and small as is the number of Europeans, a large percentage are concentrated in the five towns Mombasa, Nairobi, Dar-es-salam, Tabora, and Tanga, which are the only ones of any size in the whole of East Africa.

A map of East Africa shows an enormous block, nearly a thousand miles long from north to south, and about seven hundred from east to west, German East alone being twice as big as Germany. With the exception of a few traders and hunters, the white population is almost all confined to a much smaller area. In British East this area is roughly the district through which the upper part of the Uganda Railway runs; in German East, Kilimanjaro, and the lower part of the Tanga railway. There are also some farms on the Central Railway and in the Muansa district south of Victoria Nyanza. As the Central Railway was only finished in 1914 after eight years work, there has hardly been time for many settlers to collect near it.

Two factors regulate the distribution of the whites, communications and water, and the latter generally determines the density of the native population. The country is decidedly lacking in permanent water, and the rains are much less regular than in India.

The northern part of British East is chiefly desert. The tribes near the Abyssinian frontier are a turbulent lot, and white people are not encouraged to visit this area. The belt served by the Uganda Railway and Tanga railway comes next, and contains the bulk of the white folk. Further south is the Central Railway, with a few more whites, and south of this



is a wide strip with several large permanent rivers but no communications.

With exception of a narrow coast strip, the country is bush and desert for a couple of hundred miles from the coast. General Smuts' plan of campaign in his advance on Kilimanjaro was to cross this belt in British territory, where he had the intact Uganda Railway, rather than to land on the coast in German territory, and advance across this waste with only a damaged German line to rely on.

Animal transport in this part is practically impossible, as the tsetse fly and East Coast fever soon kill horses or bullocks. The few roads are unmetalled and break up under motors of any size. The shortage of local supplies severely handicaps porter transport, as food for the porters has often to be carried with them.

Kilindini is the great port of British East Africa. It has supplanted Mombasa itself, which lies on the other side of Mombasa island. Both lie on deep water inlets some three miles apart, which join again a couple of miles inland, thus forming an island. From the sea, there is no indication of an island. The two towns of Kilindini and Mombasa are practically one. Ships at present have to discharge into lighters, but a deep water wharf was projected before the war. Mombasa is a very old town, and was for long a bone of contention between Arabs and Portuguese, with occasional Dutch and English interference. The old Portuguese fort has stood many sieges, one lasting twenty-nine years. The streets are narrow and the houses high. Modern houses have been built along the sea front, and at Kilindini there is a big railway colony, housed in Indian style. There are many palm trees, though the sea front is bare.

The Makupa bridge, half a mile long, carries the railway to the mainland, and also the pipes for bringing water to the island. A native ferry carries foot passengers, but there is no road on the mainland except native tracks.

In British East after crossing this belt the country be-



comes more open. Till Nairobi is reached settlers are very scarce, and south of the railway is a large game reserve. It is a wonderful sight from the train. Rhinoceros, giraffe, ostrich, zebra, and all kinds of antelope and buck graze quite unconcernedly as the train passes. Nairobi itself is a quickly growing town rapidly emerging from the "tin" stage to stone. There are some five streets, with modern shops; a well built club, and several hotels. The whole town is lit by electricity, the power station being run by water. From Nairobi onwards farms are frequent, usually growing coffee. The country still rises, Nairobi itself being the same height as Quetta. It is never really hot, but whatever the height, the sun is extremely powerful.

Some distance beyond Nairobi the line drops suddenly into the Great Rift valley, here about sixty miles wide, where there are a good many stock raising farms. On the far side of this valley the line rises again through primeval forest to the Mau Summit nearly 9000 ft. up, and from here falls rapidly to Kisumu or Port Florence on Victoria Nyanza, with farms on either side most of the way.

The usual type of coffee growing estate is 2000 to 10000 acres in size. Two or three hundred acres are under coffee, the rest is used for grazing. The settlers are a good lot on the whole, and very hospitable. There are of course a certain proportion anxious to sell land to new comers, but their statements as to its value are not always unbiassed. .

A certain amount of wattle is being grown, but this industry is still in its infancy. Mealies are largely grown, and a saw mill is at work near Nakuru. Coffee is however the great crop. Some £ 3,000 to £ 5,000 capital is required to start a coffee "shamba" and three years elapse before there is any yield. The most usual way of starting is to take a job on an established coffee farm for a year or two, learn the work and then take up land. Arrangements can generally be made to have the preliminary ploughing done by a Boer. There is a fair sized colony of them on the Uasin Guishu plateau north



of Kisumu.

The tsetse fly and East coast fever are not common north of Nairobi, so there are a number of stock farms in the Rift valley, and Uasin Guishu plateau. Ploughing and transport are done with oxen. There are a few motors, but the roads are not very suitable. The settlers live scattered about the country four or five or more miles apart, and in some places a hundred miles from the railway. There are a few white ladies on the farms, but they must have rather a dull existence.

The original advance was made on the Kilimanjaro district. The main body advanced on the Voi-Moshi line, and another body from Longido, rather over a hundred miles south of Nairobi.

The Voi-Moshi line, along which a railway has been built, runs through very thick jungle and broken country, for the first forty miles to Maktau. Then it crosses more open country, and enters thick jungle again as it approaches the Lumi River at Taveta, seventy-four miles from Voi. There is no water for the fifty miles east of Taveta. A road fit for motors existed in peace time, from Voi to Moshi, but there are no farms, between Voi and Taveta.

From here on is the Kilimanjaro district. Kilimanjaro itself is a magnificent sight, visible for over a hundred miles in some directions. There are two peaks permanently snow covered, and the slopes are covered with thick forest. The land all round is said to be excellent, and the permanent snow ensures a plentiful water supply. The east slope is crossed by the old frontier line, and is not settled at all in consequence. Coffee is the principal crop.

The Tanga railway terminus is at Moshi on the slopes of Kilimanjaro. The new line however gives a shorter route to the good harbour of Kilindini. It is not of course up to London and North-Western standard, in fact engine drivers new to it have been known to express a wish to retire to hospital with "chukkurs" rather than make the return trip, but it



can be improved.

The main advance from Kilimanjaro was down the Usumbara valley to Tanga. The upper part of the valley is not much cultivated, being principally covered with thick bush, but the hills swarm with natives. The eighty miles from nearest Tanga is however one of the best parts of East Africa. It is full of farms. Rubber and sisal are the chief crops. The rubber is of second rate quality and is being gradually replaced by sisal. This sisal is used for rope making. It grows in clusters of long sharply pointed leaves, running up three or four feet from the central root, and when fully grown is impenetrable without cutting a path. To equip fully a sisal plantation, including the machinery for "decorticating" it, that is extracting the fibre, costs from £ 15,000 to £ 20,000. Most of these Tanga valley plantations are owned by companies. The Mexican disturbances have sent up the value of sisal as Mexico used to be the chief source of supply.

Wilhemstal, the northern German hill station, lies in the hills about twenty miles by road from the railway and eighty miles from the coast. It is 6000 feet up and, judging by the appearance of the German children left there, it must be very healthy. One small district is devoted to orange growing. The price is 200 to the rupee. Both sweet and bitter oranges are grown, the latter being used for smearing the bark of rubber trees prior to tapping them, thus facilitating the growth. There is a large English mission here. There were quite a number of English plantations near Tanga before the German annexation took place, and in some cases the estates are still British owned. Enormous damage has been done by the war. The sisal estates in particular are nearly ruined, owing to lack of labour for cultivation. All available men were taken as porters.

Tanga itself is a pretty little town. It is rather hot but it is well laid out and built, and there are plenty of shady trees. The harbour is indifferent, and there is a winding entrance channel. It has not suffered very badly from the



various bombardments.

Dar-es-Salam is a much larger town. It has a harbour completely land locked with a narrow entrance. Well built wharves and warehouses, with up-to-date cranes, the latter thoroughly smashed, lie on the north side of the harbour. The business part of the town lies behind the wharf. Between this and the sea coast are many good houses, with Government House overlooking the shore: the whole, hidden among trees, looks very well. As a town it is much finer than Mombasa.

The Central Railway 714 miles long runs to Ujiji on Lake Tanganyika. A branch line to Mwansa on Victoria Nyanza had just been begun. This line when finished, will considerably reduce traffic on the Uganda Railway, as at present the trade from the rich Mwansa district crosses Victoria Nyanza by ship to Kisumu, and so down the Uganda Railway. The Central Railway rises and falls several times before reaching the Summit some 400 miles from the coast, at 4000 feet. From this point it runs for several hundred miles over a plateau, through bush most of the way, passing Tabora the capital, and drops suddenly to Tanganyika.

Tabora is said to be a moderate sized town, but not so large as Dar-es-Salam or Nairobi. It is an old Arab trading centre, and road junction, and the native town is considerable.

From the coast for 150 miles the country is covered with bush and a few plantations, where there is water, of coconuts, rubber, coffee, sisal, and kapok. The line then runs up a valley with many native mealie farms, and emerges into bush and plains. There are no towns of any size.

Compared with the Tanga line, plantations are scarce. South of the Central Railway, the country is said to be principally bush. There are several large rivers, and communications, with few exceptions, are by native tracks, only fit for single file marching. It is extremely unhealthy. Officers with West African experience pronounce it to be more unhealthy than any part of West Africa.

The natives are divided into many tribes. On the coast



there is a good deal of Arab blood, but most tribes are negro in type. The Masai, however, living as nomads north of Kilimanjaro are more Egyptian in appearance, and according to some accounts are the relics of the ancient Egyptian "Shepherd Kings". Most of the tribes are cheerful folk with varying physique, and the mentality of children of eleven or twelve. Their civilisation generally is at a low ebb. Near Victoria Nyanza clothes are unknown. Their staple food is mealie meal with which they make porridge. Chupatties delighted them.

Labour is a permanent source of trouble. The Wateita, living near Voi, were most useful on the military railway, but the settlers often have great trouble in getting labour at rush times, such as gathering the coffee crop. The usual arrangement on farms in British East is to keep a number of families living on the estate. Free grazing for a fixed number of cattle is allowed them and ground for mealie growing, and they form the permanent labour staff. In German territory, villages are told off to the plantations and have to supply a fixed amount of labour. The German system is said to be good on the whole, but the usual Hun brutality is not altered by residence in Africa. The unfortunate native has had a bad time during the war, as both sides have impressed him as carriers. The Hun has revived the old slave trade custom of chaining his ammunition porters together. As soldiers, many tribes have proved excellent material.

One of the features of East Africa is the large number of Indian traders. They are chiefly Boras from Bombay, and the whole of the petty trade is in their hands. They are an enterprising lot, and penetrate everywhere. In British East almost all the skilled labour such as carpenters, smiths, and masons are Indians. They get high pay. Rs. 120 a month is quite common. The Uganda Railway subordinate staff is chiefly Indian, the Germans used Goanese and a few Africans. To our ideas the Indians in East Africa are in some cases rather



above themselves, as the presence of barbarian labour gives them a different position in the social scale.

The climate varies considerably. On the coast it is hot, damp and unhealthy. In the highlands it is never hot, but the sun is very powerful. Leave rules insist on officials taking six clear months' leave every two years and a half. There are many insect pests. The worst is the jigger flea, which lays its eggs under finger or toe nails by preference, but is not particular where it goes. It is almost impossible to avoid it, but constant wearing of boots is some protection. The mosquito is larger than the Indian variety, and carries a worse type of malaria. There is one fly, something like a grey blue bottle, that lays a live grub under the skin. The tsetse thinks nothing of biting through two thicknesses of puttee. Near Victoria Nyanza it carries the sleeping sickness germ, but elsewhere sleeping sickness is practically unknown. This fly lives in definite belts, and is rarely found outside.

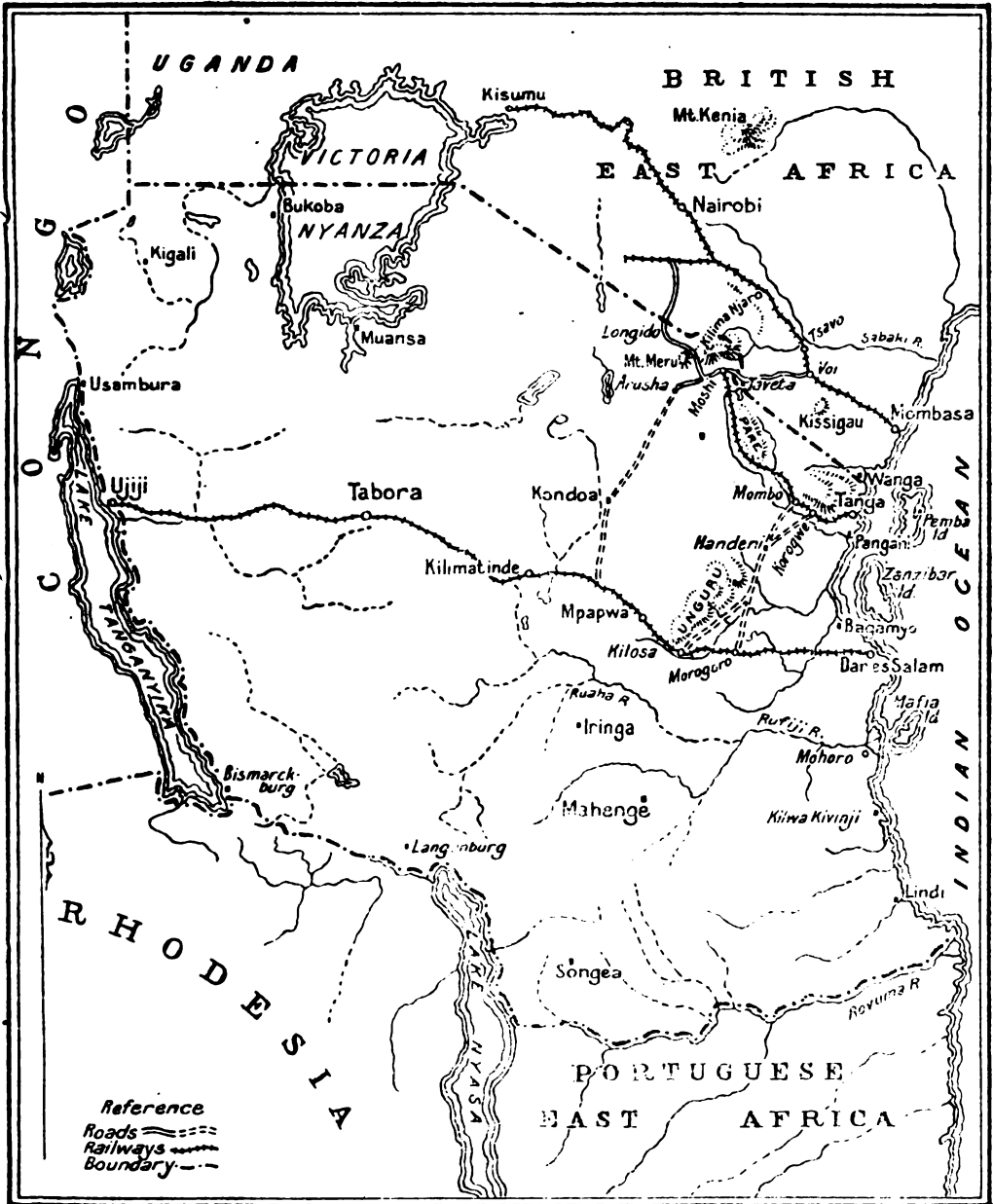
There is a great difference between the public works of British and German. The latter seem to build for twenty years ahead; for instance the Uganda Railway wayside stations are of corrugated iron, the German Railway stations of stone. Yet the traffic on the Central Railway is much smaller.

On the whole East Africa cannot be considered a white man's country in the sense that South Africa is. Considering that the Equator runs across it, this is hardly to be wondered at, though the highlands are surprisingly cool. The chief lack of the country at present is minerals. Lignite has been found near Nairobi, but no coal. Gold is said to exist in German East. The nearest approach to mineral in British East is the Magadi lake, a huge expanse of soda in the bed of an old lake. Preparations are being made to export this for petrol refining.

Though many of the settlers are enthusiastic about East Africa, there are not many men of the Expeditionary Force, who will leave it with much regret.



# EAST AFRICA.





## CORRESPONDENCE.

CHAKDARA N. W. F.

*Dated 1st May 1917.*

To

THE SECRETARY,  
U. S. INSTITUTE, SIMLA.

DEAR SIR,

The need of a standard book of reference on the several methods of waging war against civilised and uncivilised foes has probably made itself felt to most officers at some period of their studies in the Art of War.

Encyclopedias have been prepared on Sciences and Sports, and in them one may find information and references on most subjects of interest under the sun, but if an officer wishes to look up information on, say, Street Fighting, where is he to find it?

Field Service Regulations, an excellent and most prophetic work, is without doubt the most valuable book we possess as regards instructions, but to the student who may wish for illustrations of the principles so admirably set forth therein, it will probably be necessary to consult, first a catalogue, and then, having obtained several corpulent volumes which may or may not contain the required historical information, he must delve into what may prove to be a mass of irrelevant matter, leading to loss of temper and of time.

The picture may be overdrawn, but I think that you will admit that it contains a sufficiency of truth to point a moral and to prove the need of a compendium on Methods of Warfare.

The subject matter of such a work should contain the principles of each different kind of warfare, with instructions on the values of all the modern aids such as Machine and Lewis Guns, Aircraft and bombs etc. to each variety of waging War.



Chapters might be issued under the following headings:—

1. Trench Warfare.
2. Warfare in Open Country.
3. Warfare in enclosed Country.
4. Hill Warfare.
5. Street Fighting.
6. River Warfare.

Each Chapter to be divided into:—

1. Warfare against civilised nations.
2. Savage Warfare.

Under Warfare in enclosed country may be included Jungle and Bush Warfare.

Principles should be illustrated by brief historical references, as in Major Callwell's *Small Wars*.

An Index and a list of sound historical books, classified under the above headings, would be of great assistance to the student who wishes to pursue still further the study of any particular kind of warfare.

I have written the above with a view of obtaining opinions and ideas on this subject from officers whose experience is of greater value than mine. If you decide to publish this letter and invite discussion, my object will have been attained.

While I acknowledge the difficulty of undertaking such a work at the present juncture, I would point out that the fact of the present tremendous influx of young officers of little or no experience into the Army only shows the greater need of some such aid to military knowledge.

The later difficulty of keeping up to date could I think be met by the issue of a publication each year which could be added to the original volume or volumes.

Yours faithfully,

E. M. HOBDAV, Captain.

*41st Dogras.*



## **TRANSLATIONS FROM RUSSIAN NEWSPAPERS.**

*"The Novoe Vremya"*

*1st to 14th February 1917.*

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### **The Danube:—Dreams and Realities.**

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Under this heading the *Novoe Vremya* devotes a long leading article to the lately introduced project in the Bavarian Landtag of a canal joining up the Danube and the Rhine. Five million marks have been allotted for the preliminary investigation and study of the problems involved, and it is already asserted that such a canal—even incomplete in some respects and without its branch connecting it with Munich, the capital of Bavaria—will cost one thousand million marks.

As is well known, there is already a canal connecting the upper reaches of the Main with Regensburg on the Danube: but this canal, navigable only by small vessels, has never satisfied the Bavarians. For more than 30 years a campaign has been carried on, urging the construction of a canal fit to take ships of 1200 tons. The King himself expressed his personal interest in the project, but the enormous financial difficulties delayed the enterprise. Now, however, in the depth of this great war, when Germany's resources are taxed to their utmost limit, the step is suddenly taken of making a serious allotment of money towards the realisation of the project which King Ludwig described in the following terms:—"The Rhine will be a Bavarian port on the Atlantic: the Danube a Bavarian port on the Black Sea: and the Regensburg—Ashafenburg canal will be our Straits of Gibraltar". This formula gives some idea of the grandiose scheme, which the Bavarian Government proposes to bring to completion during the next eight years.

It must not moreover be thought that the Rhine-Danube canal scheme exhausts the stock of German ideas and projects. Two more big artificial arteries are to connect the Danube with the Elbe and the Danube with the Oder, both



of which will traverse very rich tracts of country. The key of the whole system is the Danube—controlled and harnessed—upon which, as far as Regensburg, will navigate a standardised type of vessel of 1200 tons. Should these ideas be realised, it is easy to imagine that Gibraltar will see no more of the products coming from the Balkan Peninsular and Turkey. These products are by no means insignificant, for Roumania alone exported seven times more wheat into Belgium via the Straits of Gibraltar, than she sent into Germany *via* the badly controlled Danube. If, as the Germans expect, the obstacles on the “greatest European river” are removed, then one can easily imagine the economic revolution produced in the near East. It can be said without exaggeration that the success of this scheme would constitute a greater victory for Germany over the Near East than all the successes of Mackensen and Falkenhayn. For this reason we have always followed with the greatest interest all that has been written in Germany on the subject of the Danube.

We will not enter into the technical difficulties of the project: there are no bounds to science and the whole question resolves itself into one of obtaining sufficient money. Since Bavaria has obtained the promise of financial aid from the German Imperial Treasury, it is probable that the money will be forthcoming unless Germany goes bankrupt after the War. The centre of interest for Russia is the political aspect of the case. The Danube flows past many kingdoms of mixed peoples, tongues and tribes, and the introduction of a uniform regime among them seems to present an obstacle more serious than the hydrostatical problems already foreseen by the experts. The Germans themselves realise this, and in September 1916 an international Conference was to have assembled at Buda-Pesth to consider the Danube question, and much was expected of it. However, the intervention in the war of Roumania, just before the Conference began, upset matters and no important decisions were arrived at.

The political significance of the great central European



waterway, the Danube, does not concern only Roumania but also Russia, which fact the Germans hide as little from themselves as from their enemies. The "Frankfurt Gazette", which has printed many interesting articles on the Danube, recently expressed its opinion in unmistakably clear terms. First of all Roumania must be so reduced that she will never again risk rebelling against the will of the Hohenzollerns. But that is not enough. "While Russia possesses one of the best channels of the Danube Delta and is mistress of the Black Sea, the Danube cannot be considered free". In other words the Danube canalisation scheme entails the ousting of Russia from the Kilia Mouth of the Danube and from the Dniester. In conjunction with this policy there is an intention either to limit Russia's naval power in the Black Sea, in imitation of the unfortunate treaty of Paris, or to establish at Varna a naval port, which should always contain a numerical superiority of German and Turkish war ships.

From what has been said it can be seen how great and far-reaching an upheaval Germany intends to bring about by the seemingly innocent project of canalising the Danube. We may be told that hitherto there has been an international European Commission on the Danube in which the Germans have so far shown no signs of being paramount. Quite so, but the Bavarian King has turned his attention to that point and is conducting a campaign in papers controlled by him against the "unsatisfactory state of affairs" existing on the Danube Commission: he considers it should be abolished and Roumania removed from its successor as unworthy of the confidence of the central powers: the Austrians and Bavarians, as the sole "real masters of the Danube", should be granted the right of managing and supervising all matters concerning the river.

We quite understand why the Bavarian Government is putting forward the Danube question with such persistence: the authorities at Munich intend it to constitute some sort of compensation for the enormous sacrifices made by Bavaria in



the present war, for the realisation of the scheme would turn Regensburg, that is Northern Bavaria, into a Central Mart for all European Asiatic merchandise. We understand less the reasons leading Prussia to deliver into the hands of her immemorial enemy such a valuable asset as this: one can only imagine that the Emperor William has no choice but to meet Bavaria half-way. One thing, however, we completely fail to comprehend. Do the Germans really consider that they have wiped both Serbia and Roumania from the face of the earth and will be in a position to impose on the Russian Black Sea Fleet those humiliating conditions, without which the whole Danube scheme will constitute nothing but a vast and unguaranteed outlay of millions and millions of money?



## **QUARTERLY SUMMARY OF MILITARY NEWS AND ITEMS OF INTEREST.**

### **ARMY HEADQUARTERS.**

**213 Officers on sick leave in India.**—The second clause of paragraph 1 of India Army Order No. 615 of 1916 is reconstructed as follows:—

An officer on arrival at the station to which he proceeds to spend such leave will report himself both—

- (a) to the Officer Commanding the Station, or, in the case of a non-military station, to the General Officer Commanding the Brigade, and
- (b) to the Senior Medical Officer of the Station (in the case of Simla or a non-military station, to the Civil Surgeon) and will be informed by the latter of the name of the Medical Officer in whose medical charge he will be during his stay in the station.

**291. War Leave—Officers.**—In supersession of all India Army Order No. 9117. Orders which have been issued from time to time during the War on the subject of leave to British officers of the British and Indian services, serving regimentally or on the staff, or with Department and services, the following revised rules will be introduced with effect from the date of publication of this order:—

- (i) Leave, to be termed "War leave" and which is in substitution for privilege leave, will be granted in accordance with the rules for privilege leave contained in Army Regulation, India, Volume II, the existing rules in which for the grant of district or temporary, and recreation leave, will stand, but this leave will not be taken in combination with War leave
- (ii) War leave will not exceed 60 days in any case and may only be granted during the leave season, *i.e.*, between the 1st April and 15th October.
- (iii) All officers must be within 60 hours of recall when on War leave, [but see clause (iv)] and 12 hours of recall if on district or temporary and recreation leave.



(iv) Officers of the garrisons of Fort Sandeman, Loralai and Port Blair will not be allowed more than 60 days' War leave, but for the purposes of recall, officers stationed at Fort Sandeman and Loralai are permitted to reckon the number of hours from Harnai railway station, and officers at Port Blair may reckon the time from the port of disembarkation in India or Burma.

2. Leave is to be given solely with the object of keeping officers in a fit state of health and for purposes of recuperation.

3. The authority for the grant of leave is delegated to those officers who are responsible for training and for the maintenance of units and services in a proper state of efficiency, and for maintenance of security and defence of their areas. For War leave, the General Officer Commanding the Division, Divisional Area or Independent Brigade will be the authority. For district or recreation leave, as laid down in Army Regulations, India, Volume II, paragraphs 224 and 225.

4. The number of officers who may be absent at the same time will be fixed by the General Officer Commanding the Division, Divisional Area or Independent Brigade.

5. Any leave granted under these rules will not count against an officer's claim to accumulated privilege leave hereafter, *vide* paragraph 221, Army Regulations, India, Volume II.

**410. Pay and Allowances.**—It is notified for information that,

23rd April 1917.  
Army Department  
letter No. 4432, dated  
24th March 1917.

with the approval of the Right Hon'ble the Secretary of State for India, the Government of India have decided that when Government quarters are not available a lodging allowance of Rs. 35 per mensem may be granted to married subalterns

holding permanent commissions in the regular army, who, before being commissioned were serving as warrant officers or non-commissioned officers on ordinary peace attestations in the regular army and were promoted subsequent to the 1st January 1914. The concession has retrospective effect from the 1st October 1916, and will continue in force for the period of the war.

**510. Officers.**—With the approval of the Right Hon'ble the Secretary of State for India, the Government of India

14th May 1917.  
\* Army Department  
letter No. 5598, dated  
20th April 1917.

have sanctioned\* the admission of officers of the Indian Army Reserve of Officers into the Indian Army subject to the following conditions:—



**Quarterly Summary of Military News.**

- (a) A candidate must be at least 19 years of age at the date of his application. A candidate for Indian Cavalry must have been under 26, and a candidate for Indian Infantry under 28 years of age, on the date on which he was commissioned, or on the 5th August 1914 whichever is the later date.
- (b) A Candidate must have not less than one year's service as a commissioned officer at the date of his application. Such commissioned service may have been either in the Indian Army Reserve of Officers or in a British unit, or in both combined.
- (c) A candidate must be unmarried.
- (d) A candidate must be recommended by the commanding Officer of his own unit, who must certify that he is willing to accept the candidate as an officer in his own regiment or corps; and he must also be recommended by the General Officer Commanding the Brigade and Division in which he is serving, and by His Excellency the Commander-in-Chief in India.
- (e) A candidate must ordinarily have attained a standard of general education equivalent to the standard for matriculation at a university.
- (f) A candidate must be reported by a medical board to be physically fit for a permanent commission in the Indian Army.
- (g) A candidate will be admitted to the Indian Army with effect from the date notified in the Gazette of India, and will be eligible for retention, promotion and pension in the Indian Army in accordance with the provisions of paragraphs 310, 311 and 318, Army Regulations, India, Volume II, and paragraphs 694, 706, 163 and 163-A., Army Regulations, India, Volume I, as modified by any special orders issued in connection with the war.
- (h) A candidate will count for pension all services as a commissioned or warrant officer and one-half of service in a lower rank, rendered since the 5th August 1914, but only service in the regular forces before that date will count for pension as above. The period of service out of India prior to joining the Indian Army allowed to count for



pension is subject to the limit of 5 years laid down in paragraph 694 (a), Army Regulations, India, Volume I.

- (i) A candidate will count for promotion the period of commissioned service which he is permitted to count for pension, less nine months, and the date of his commission in the Indian Army will be regulated accordingly.
- (j) With effect from the date of appointment to the Indian Army, an officer will be required to subscribe for the benefits of the Indian Military Widows and Orphans Fund.

2. In exceptional cases of proved merit in the field, of which His Excellency the Commander-in-Chief in India shall be the sole judge, the conditions laid down in (a), (b), (c), (d), and (e) may be waived, each case being judged on its merits. No application in respect of such a case should, however, be submitted unless the officer's services have been not only meritorious, but exceptionally so.

3. Applications for commissions in the Indian Army should be submitted to the Military Secretary to His Excellency the Commander-in-Chief on forms which can be obtained on application to General Officers Commanding.

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**511. Officers.**—In order to place officers who are granted commissions in the Indian Army after service in the Special Reserve, Territorial Force and New Armies, on an equality as regards service for promotion with officers who are similarly granted commissions in the British Service, it has been decided that certain modifications shall be made in the terms offered in India Army Order No. 729 of 1916. That order and India Army Order No. 126 of 1917 are accordingly cancelled and the following substituted :—

With the approval of the Right Hon'ble the Secretary of State for  
\*Army Department India, the Government of India have sanctioned\*  
letter No. 5686, dated the grant of permanent commissions in the Indian  
21st April 1917. Army, up to a limited number, to selected officers  
of the special Reserve, Territorial Force and New Armies under the  
following conditions :—

- (a) A candidate must have been under 26 years of age on the date on which he was commissioned, or on the 5th August 1914, in the case of an officer who held a Special Reserve or Territorial Force commission before that date.



- (b) A candidate will count for pension all service as a commissioned or warrant officer, and one half of service in a lower rank, rendered since the 5th August 1914, but only service in the regular forces before that date will count for pension as above. The period of service rendered *out of India* prior to joining the Indian Army, allowed to count for pension, is subject to the limit of 5 years laid down in paragraph 694 (a), Army Regulations, India, Volume I.
- (c) A candidate will count for promotion the period of commissioned service which he is permitted to count for pension less nine months, and the date of his commission in the Indian Army will be regulated accordingly.
- (d) An officer will join the Indian Army on probation in the rank to which his length of service adjusted as above would entitle him under Indian Army rules of promotion, any higher rank being relinquished. Readjustments of rank will be effected as follows:—
  - (1) In the case of an officer sent from England to India, from the date of landing in India :
  - (2) In the case of an officer serving in India or on field service, from the date of joining an Indian unit :
  - (3) In the case of an officer already attached to an Indian unit, from the date of his acceptance as a probationer for a commission in the Indian Army as notified in the "Gazette of India ;" (but this will not affect any pay previously drawn, *vide* paragraph 318-A., Army Regulations, India, Volume II).
- (e) An officer will be on probation for the first year in the Indian Army, and if found unsuitable may be reverted at any time within the first year to his original corps.
- (f) An officer must be unmarried.
- (g) An officer will receive Indian rates of pay and allowances during the period of his probation.
- (h) During the period of probation an officer will not be allowed to subscribe to the Indian Military Widows and Orphans Fund, but such subscription will be compulsory with effect from the date of his permanent admission to the Indian Army.



2. An officer who has already submitted an application for a permanent commission in the Indian Army under the terms of India Army Order No. 729 of 1916, and who is not prepared to accept the conditions now stated, will be permitted to withdraw his application.

3. Applications for commissions in the Indian Army should be submitted to the Military Secretary to His Excellency the Commander-in-Chief in India on special forms which can be obtained on application to the Military Secretary, India Office, General Officers Commanding Divisions in India or General Officers Commanding Forces in the field.

**679. Officers.**—In order to ensure that information received  
18th June 1917. regarding officers who become casualties is communicated without delay to their relatives, it is essential that the registered addresses of next of kin whether in or out of India should be kept up to date. All officers should therefore inform their next of kin that any change of address should be communicated as early as possible to the Military Secretary to His Excellency the Commander-in-Chief.



## REVIEWS OF BOOKS.

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*Guide to Pioneering with Instruments, by 2nd Lieut. L. S. Palmer, The Northampton Regiment, Instructional Staff, Pioneer School of Instruction. Gale and Polden L. D. Price 1s. 6d.*

The object of this book is to describe and explain the uses of such simple instruments as are likely to be served out to a Pioneer Regiment. The various methods of employing the Field Level, Delisle Clinometer, Boring Rods, and the Pick-Axe are described in some detail. Some of these are ingenious and original.

The language used is so simple that the book is evidently intended only for those equipped with a limited education. In his search after simplicity the author, on more than one occasion, has allowed his language to become involved and his meaning is not as clear as it might be. He also, in places, departs from that logical sequence which is so necessary where clear description is desired.

We think an endeavour has been made to make these simple instruments perform operations for which they were never intended and are hardly suitable. In attempting to do this there is a tendency to confuse the reader.

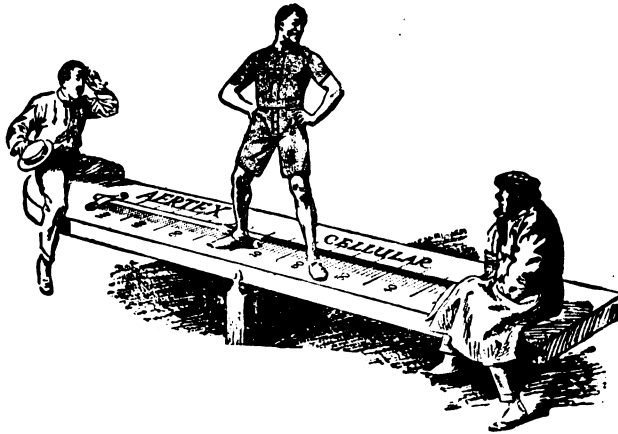
The method suggested on p. 33 of finding the range of an enemy machine gun could hardly be carried out in practice, on account of the exposure it would involve. We are not certain of the object of introducing the remark, on p. 38, regarding the method employed by the Greeks for finding latitude, but we are certain that, as stated here, it is very misleading.

Notwithstanding its faults it is a well meaning and suggestive little book, but unfortunately, in many respects, fails to carry out in a satisfactory manner the author's evident good intentions. We think it is on the right lines as a book of instruction for the rank and file, for such a book tends to make men take an interest in their work, and the instruments they have to handle. We, therefore, do not criticise in any carping spirit, but rather to suggest to the author that it would be well worth revising and rearranging, in order to eliminate certain portions and to make others clearer in meaning.





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(b) For soldiers—British or Indian—a silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution, who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.\*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

### *Note.*

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

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1891...SAWYER, Major H. A., 45th Sikhs.

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1892...VAUGHAN, Capt. H. B., 7th Bengal Infantry.

JAGGAT SINGH, Havildar, 19th Punjab Infantry.

1893...BOWER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).

FAZALDAD KHAN, Dafadar, 17th Bengal Cavalry.

1894...O'SULLIVAN, Major G. H. W., R.E.

MULL SINGH, Sowar, 6th Bengal Cavalry.

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\* *N. B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves; also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, such as Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.



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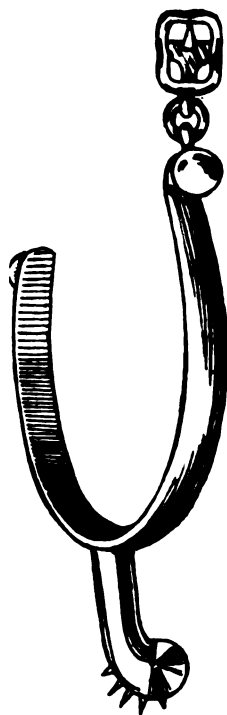
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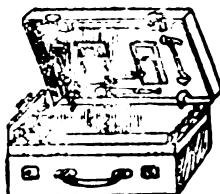
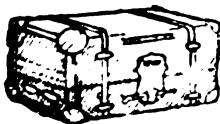
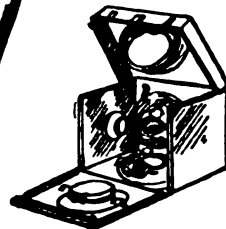
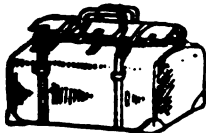
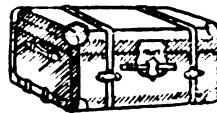
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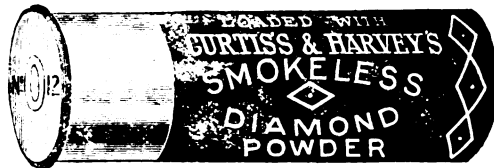
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- The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members; but ordinary members wishing to have their journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.
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Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

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All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para. 487, and King's Regulations, para. 453.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer, and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.



## NEW BOOKS.

| Title.                                                        | Section. | No.  | Author.                           |
|---------------------------------------------------------------|----------|------|-----------------------------------|
| Arabic of lower Mesopotamia, Notes on Colloquial.             | Q        | 240  | Kelly, Lt. T. J.                  |
| Army Regulations India Vol. VIII                              | A        | 215  | Official                          |
| Army Regulations India Vol. X                                 | A        | 216  | Official                          |
| Battles of the Somme ...                                      | K        | 157  | Gibbs, Phillip                    |
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# United Service Institution of India.

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With reference to Army Regulations, India, Volume II, paragraph 487, and King's Regulations, paragraph 453, as amended by Army Order 340 of 1913, intending contributors to the Journal of the United Service Institution of India are informed that action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee. Contributors are, therefore, responsible that the sanction of their immediate superior has been obtained, and this should be noted on all articles sent for publication. Articles need not be submitted in duplicate.

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| Lieut.-Colonel R. Wilson.    |                         |

### II.—Tactical Problems.

In order to assist officers working for tactical examinations, the Institution has schemes with maps for issue to members only, at Rs. 5 each, which includes criticism and a solution by a qualified officer; or without criticism, Rs. 2-8-0 each. 26 schemes are now available.



### **III.—Maps.**

The Institution has for sale a variety of large scale maps (1 and 2 inches to one mile), price As. 8 each.

They are specially useful for instruction in map reading, tactical schemes and in preparation for examination, and can be had either of English or Indian country.

### **IV.—Premia for Articles in the Journal.**

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

### **V.—Contributions to the Journal.**

With reference to Army Regulations, India, Volume II, paragraph 487, and King's Regulations, paragraph 453, as amended by Army Order 340 of 1913, intending contributors to the Journal of the United Service Institution of India are informed that action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee. Contributors are, therefore, responsible that the sanction of their immediate superior has been obtained, and this should be noted on all articles sent for publication. Articles need not be submitted in duplicate.

Contributors must have their articles either typed or printed.

### **VI.—Library Catalogue.**

The library catalogue revised up to 1st January 1916 is now available. Price Rs. 2 or Rs. 2-4-0 per V.P.P. A list of books received each year is published with the January Journal.

### **VII.—Gold Medal Prize Essay 1917-18.**

The Council have chosen as the subject for the Gold Medal Essay for 1917-18 the following:—

**The manœuvres of the future, and the general principles on which higher peace training should be conducted in view of the lessons of the present war.**

The following are the conditions of the competition:—

(1) The Competition is open to all gazetted officers of the Civil administration, the Navy, Army and Indian Defence Force who are members of the U.S.I. of India.



## **Secretary's Notes.**

(2) Essays must be printed or type-written and submitted in *triplicate*.

(3) When a reference is made to any work, the title of such work is to be quoted.

(4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto written on the outside, and the name of the competitor inside.

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June 1918.

(6) Essays will be submitted for adjudication to referees chosen by the Council. No medal will be awarded if the Council consider that the best essay is not of a sufficient standard of excellence.

(7) The name of a successful candidate will be announced at a Council Meeting which will be held in August or September, 1918.

(8) All essays submitted are to become the property of the United Service Institution of India *absolutely*, and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

(9) Essays should not exceed about 15 pages of the Journal when printed, exclusive of any appendices, tables or maps.

### **VIII.—War Maps.**

War maps are on view in the Reading Room of the Institution with the positions of the troops, so far as is known, marked with flags in each theatre of War.

### **IX.—Amendments to Rules of the U.S.I. of India.**

#### SECTION VI—MEMBERSHIP.

*Paras 2 and 3 of the above section have been amended to read as follows:—*

#### *Para 2.*

“Life Members of the Institution shall be admitted on the following terms:

Rs. 75 *plus* entrance fee Rs. 10 (*see* para 4) or Rs. 85 in all.



## Secretary's Notes.

iv

### Para 3.

"Ordinary members of the Institution shall be admitted on payment of an entrance fee (*see* para 4) of Rs. 10 on joining, and an annual subscription of Rs. 5 *to be paid in advance*. The period of subscription commences on 1st January."

### Para 3 (a).

All members of the Institution resident in Simla for not less than 90 days during the year will be charged an *additional* subscription of Rs. 5 per annum from the 1st January 1917.

### X.—List of new books in Library.

|                                                                         |     |     |         |
|-------------------------------------------------------------------------|-----|-----|---------|
| A soldier's memories in Peace and War by Maj.-Genl. Sir G. Younghusband | ... | ... | B. 270. |
| Winnowed memories by Field Marshal Sir E. Wood                          | ... | ... | B. 271. |
| Early English Adventurers in the East by Arnold Wright                  | ... | ... | F. 349. |
| The Expansion of Europe by Ramsay Muir                                  | ... | ... | N. 384. |
| International Finance by Hartley Withers                                | ... | ... | N. 385. |
| The Scene of War by V. C. Scott-O'Connor                                | ... | ... | K. 162. |
| Quand on se Bat by F. De Tesson                                         | ... | ... | K. 163. |
| The Russian Offensive by Stanley Washburn                               | ... | ... | M. 901. |
| Kalam-i-urdu Pts. I and II by Major E. G. Trotter and Abdur Rahman      | ... | ... | Q. 244. |
| The Aeroplane Speaks by F. Barber                                       | ... | ... | L. 15.  |



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# United Service Institution of India.

## RULES OF MEMBERSHIP.

**A**LL officers of the Royal Navy, Army, Colonial Forces, and of Volunteer Corps in India and Gazetted Government Officers shall be entitled to become members without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 75 + entrance fee (Rs. 10) = Rs. 85.

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All members of the Institution resident in Simla for not less than 90 days during the year will be charged an additional subscription of Rs. 5 per annum from the 1st January 1917.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying the postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 8, in advance, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 8 per annum.

Serjeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 6.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

## Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para. 487, and King's Regulations, para. 453.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer, and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.



## ***United Service Institution of India.***

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### **PATRON.**

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His Excellency the Right Hon'ble The Lord Pentland, P.C., G.C.I.E., Governor of Madras.

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His Excellency the Right Hon'ble The Earl of Ronaldshay, G.C.I.E., Governor of Bengal.

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After Nov. 15th 1917 correspondence  
for the Secretary should be addressed to  
Delhi; for the Librarian to Simla, until  
further notice.

books on loan, free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V. P. for the postage, or bearing by railway.

5. The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members; but ordinary members wishing to have their journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.

6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found on the opposite page.

7. MEMBERS ARE RESPONSIBLE THAT THEY KEEP THE SECRETARY CAREFULLY POSTED WITH REGARD TO CHANGES OF ADDRESS.

8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months.



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\*Members of the Executive Committee; also

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2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed on the opposite page.
3. The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published. War maps are on view in the Reading Room, with the positions of the troops, so far as is known, marked with flags, in each theatre of war.
4. There is a well-stocked library in the Institution, from which members can obtain books on loan, free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V. P. for the postage, or bearing by railway.
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*Records.*

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|-------------------|-----|-----|-----|-------------|
| REVENUE ...       | ... | ... | ... | £1,560,000  |
| BONUSES DECLARED  | ... | ... | ... | £8,170,000  |
| ACCUMULATED FUNDS | ... | ... | ... | £13,580,000 |
| CLAIMS PAID       | ... | ... | ... | £34,390,000 |

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W. E. HILL,  
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# The Journal

OF THE

## United Service Institution of India.

---

Vol. XLVI.      OCTOBER 1917.      No. 209 .

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**THE BATTLE OF THE SOMME.**  
***Lecture delivered by Captain A. V. Gompertz,***  
***M. O., R. E., at the Officer Cadet Unit,***  
***Lower Topa, and later at Murreo.***

---

My lecture, Gentlemen, is divided into eight parts as follows:—

1. Introduction.
2. The Importance of the Somme.
3. The Objects of the Battle.
4. The Chief New Features of the Battle.
5. A rough sketch of events.
6. Some features of interest.
7. The Results of the Battle.
8. Its Lessons.

These I shall treat in detail, taking each as a separate chapter.

**1. Introduction.**—To treat of the history of the Battle of the Somme in an hour and a half is as impracticable as to run through the history of Europe in a day.

Moreover you can all buy detailed histories on every railway bookstall.

All I propose to do now is to give you a rough trace of the events of the battle, coupled with a few comments, and also with the mention of some points which seemed to me at the time to be of particular interest.



***The Battle of the Somme.***

It will only be possible, in the time at my disposal, to deal with the British portion of the offensive, and not with the French attacks, which were going on concurrently on our right, with perfect co-ordination and perfect success.

The lecture will only comprise the actual Battle of the Somme, and not the action of November the 13th, 1916, by Sir Hubert Gough. That I have considered as an isolated and brilliant success at the end of the battle of the Ancre.

There seem to be some differences amongst writers as to the real distinction between the battles of the Somme and the Ancre. The Ancre is a northern tributary which joins the Somme very much west of the fighting area, after having flowed south, just west of that area, until it has reached a point very near the actual Somme.

For the purposes of this lecture therefore, I have taken the operations of Sir Henry Rawlinson's Fourth Army, which fought in conjunction with the French close to the Somme river, to constitute the Battle of the Somme.

The work of Sir Hubert Gough's Fifth Army, which fought strictly in or near the Ancre Valley, north of the Albert-Bapaume road, I have classed as the Battle of the Ancre. This latter battle therefore commenced in July alongside, and a little later than, that of the Somme.

On September the 26th when the fall of Guedecourt and Combles closed the Somme proper, the Ancre campaign, taking Thiepval that day, stopped for a halt only, preparatory to its final effort, the taking of Beaumont Hamel and Beaucourt in the middle of November.

I wish to make one small personal note, regarding my qualifications to talk to you here to-day.

Although not by way of doing rifle and bayonet work myself, I was present throughout the whole campaign of the Somme in the fighting area, under circumstances which allowed me exceptional facilities for observation.

All that you will hear, therefore, will be the result of close touch with facts; and nothing will have been taken in any



way from other writers' works, except one or two dates of events away from my own immediate front.

**2. The Importance of the Somme.**—This I take under two headings:—

A. The first is an aspect which could be well seen by every man in the ranks.

It was, that on the Somme we definitely and finally gained the Initiative in the west, which Germany had possessed uninterruptedly for nearly two years.

From August 1914 right up to the end of 1915 the British troops were completely the under dog. Those of you who were there in those days will remember the real cloud under which we lived. In men, munitions, and devices, we were infinitely inferior to the enemy.

Each time we attacked, one heard the same plaint:—"We had him dead beat, if only we had had a couple of fresh divisions to follow up with". But we had not, and his overwhelming counter attacks used to sweep us out of almost every bit of ground we gained.

In artillery and munitions too he had incalculable superiority. Reprisals were unknown or negligible. We could only send over a couple of field gun rounds to his dozen of heavies.

In devices too he had the best of us; he killed us with gas before we knew what it was, he sent us from his trench-mortars ten-inch "Rumjars" dated 1913, whilst we threw back little projectiles made from half a 13pr cartridge case.

We never knew of fresh divisions behind us; our last defences on the road to Calais and Boulogne were the choppers of our own cooksates. At all times it was not "What are we going to do?"; but "When and where is the enemy going to launch an overwhelming offensive that we cannot hope to stop?"

At the beginning of 1916 came the change. It came by degrees, but those degrees were of the most marked surety and followed one another in quick succession.



***The Battle of the Somme.***

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At the beginning of 1916 came the change. It came by degrees, but those degrees were of the most marked surety and followed one another in quick succession.



## ***The Battle of the Somme.***

Fresh divisions appeared behind us from nowhere, fresh Corps even: transport bearing unknown marks began to be common in the streets of Hazebrouck, Merville, and St. Venant.

Ammunition too began to arrive in hitherto unheard-of quantities. My own Division in those days marvelled greatly because they were allowed to send three hundred rounds of 18 pr. over one night, at a big massing of German transport which our I.D. had (extremely accurately) anticipated near Aubers.

Fresh guns too came up slowly, sixty pounders and 8-inch howitzers began to increase and multiply; Ordnance Stores too got better in super-efficiency and were more quickly and freely served.

I don't think we had definite ideas of a big offensive yet; but by March or April 1916 the period of dark misgiving was entirely a thing of the past. We had equal strength with the enemy, and every man in the front line felt the difference and was correspondingly happy.-

By June 1916 we were literally flooded with guns, men, and ammunition; and we then had, what everyone felt and knew, Great Strength, on a leash so to say.

The last German attempt to keep the Initiative in the west had failed at Verdun, due to the magnificent stamina of the French.

On the first of July 1916 our Strength in Leash was let loose; and from that very day we took to ourselves the Initiative in the West, which we can never conceivably lose again.

That was the first Importance of the Somme.

B. The Second point of importance was one which concerned Commands and Staff in the first place, but each and all under them in effect.

That was, that every man in the west is now fighting day by day on what he or his teachers learned on the Somme.

There have been only minor developments of small kinds this year, in the tactics learnt as successful on the Somme, and practically not one single new feature since.

C. Perhaps a third matter one might touch on will con-



stitute a third Importance of the battle ; namely its correlation with after events.

It was the direct beginning of the continual offensive which will end the war.

- (a) The Somme began on July the 1st, and made a doorway for the Ancre campaign which joined it towards the end of that month.
- (b) The Somme and the Ancre proceeded side by side until the Somme was over on September the 26th, and the Ancre halted.
- (c) The Ancre had its finale on November 13th to 17th, when we took Beaumont Hamel and Beaucourt.
- (d) At the ends of these two campaigns we knew that the enemy would have to go back. It was merely a question of time, the weather treated us cruelly. Without that, the Great Retreat might well have been forced under winter conditions. Thus the Somme, and with it the Ancre, brought about the Great Retreat (March 1917).
- (e) The Great Retreat brought about the Battle of Arras : a threat to its own right.
- (f) Since the battle of Arras, there has been nothing but straightening out of the line, preparatory to the next big Offensive. This, I have reason to believe, will take place actually in a day or two.

*N.B.*—(This lecture was originally delivered on the morning of August 1st, before any news had come through).

Two instances of straightening the line are our own very successful operations at Messines and Witschaete ; and the good, but very minor, work of the enemy by Dixmude.

Thus this third aspect of importance of the Somme becomes clear, in that it was in no way an isolated operation, but the first link in a great and strong chain.



## ***The Battle of the Somme.***

In more ways than one, it was 'The Beginning of the End.

**3. I now come to the Objects of the Battle.**—These were three, excluding Political and International ones which do not concern the fighting soldier.

A. The first was, to kill as many Germans as possible, and to incapacitate and capture as many more as possible.

This, the most important object, you will recognise as coming straight from the Text Books, *viz.* the Destruction of the Enemy's Forces in the Field: the oldest principle of war.

When Samson slew his hundreds with the jawbone of an ass, we are not told that he gained an acre of ground in so doing.

B. The second object, was to reconquer as much territory as possible. This was subsidiary.

C. The third was, to gain the Initiative and to keep it. That I have touched on already.

When talking of the objects of the Battle, one is led naturally to consider the possibilities it entailed.

These were three in number.

1. That we should break right through the German line, and force the enemy right back into his own country.
2. That we should break through gradually, and to a certain distance, before winter perforce put a stop to Field Operations.
3. That we should not be able to pierce the enemy's line at all.

All these three had to be legislated for, and completely co-ordinated arrangements had to be made for each.

Unlike our enemy on previous occasions, we did not work out the most probable one and say "I reason that it must go so; therefore it will go so."

The great weight of opinion that one heard, and, I think I am right in timidly saying, the personal opinion of the Commander in Chief, was for the second alternative.

But all three were very fully legislated for, including of course the possibility of very heavy counter attacks under 2. & 3.



One more matter may be touched on here, which may be said to be a fourth object of the battle, arising after the second of the Possibilities had actually materialised.

That was, to secure a Rounded Finish. By the time that the year's fighting was over, we held the commanding ground and every advantage that it gave, over the whole front of the Offensive.

We had better ground, better observation, and better communications as far as the ground served, from Beaumont Hamel to Combles, than the enemy.

The conditions for the then under-dog in the winter were, we knew, unbearable, and we meant them to be. It was thus that the Great Retreat was assured in reality before the last day of November 1916. The weather, and nothing else, postponed it till March 1917; and on that account, the weather having hindered us abominably too many times in the summer, we allowed the possibility of a substratum of truth in the enemy's eternal "Gott mit Uns"!

**4. Sallent New Features.**—There were many new features on the Somme: I have only selected nine, which appear to be worthy of special note and seemed to be especially new.

These were:—

I. The battle was our first really large and determined Offensive. As one paper put it, it was the first time we had taken up the offensive on a scale worthy of the Empire. Some ten divisions were launched in the first attack, making 200,000 troops directly concerned. The actual number of men who climbed out of the front line trenches at zero must have been at least in the neighbourhood of 10,000.

Those of you who were in the attack of the 25th of September 1915, afterwards miscalled the battle of Loos, will remember that that took place on a very wide front.

The Meerut Division went over in front of Fauquissart, whereas the southernmost attackers were well south of Loos.

But that day there was no backing and there could not be; we had not the men in France. The attack was vitally ne-



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## ***The Battle of the Somme.***

cessary: the numbers of men to turn it into a Somme were not yet in the Field.

On the Somme however, although, as mere miles go, we only attacked on a slightly wider front, there was a weight of men ready and fresh behind the attackers, divisions and Army Corps to spare.

II. The second salient new feature I have selected was the enormous number of troops who took part in the battle between June and November.

Going on the principle that a division "expended" (very badly hit about and sent back to refit and bring up its often pitiable numbers to full strength again) counts as a new division, when it comes up fresh and recouped to fight again, something like 240 divisions of all sides were engaged. (British, French, and enemy). Add to that the very large numbers of Corps Troops and Army Troops, administrative units, medical units, labour units, etc, that played a very direct part in the operations; and the sum total concerned must be in the neighbourhood of 5,000,000.

III. The third new feature consists of six points of material difference in our Artillery.

- (a) The enormous masses used. The whole countryside behind the front was dotted with guns, of all sizes calibres and natures. I cannot give actual figures, but they were colossal.
- (b) The extraordinary increase of calibre of guns used in field operations. The Divisional Artilleries became like glorified machine guns, and 60 prs, 6-inch, 8-inch and 9·2-inch howitzers were very common. There were also many 12-inch and some 15-inch hows; 6-inch and 12-inch Naval guns, and possibly one or two 15-inch guns, though I am not at all sure of the last kind.
- (c) The marvellous progress in accuracy of our guns and howitzers of all kinds. Direct Hits were the order of the day; and the quick way the Kitchener and later



gun-layers picked up very accurate shooting was a splendid surprise for all concerned. Especially perhaps for the enemy, barring the splendour; for the German puts such faith in his own long-trained regular artillery.

- (d) The practically unlimited supply of all kinds of ammunition: a very great contrast to earlier days. Only on very rare occasions indeed was a single gun held up in its programme for lack of rounds; and even then it would be a question of transport rather than ammunition.
- (e) The development and perfection of **Creeping Barrages**: that is to say of barrages which go forward with the attacking Infantry at a perfectly regular pace, and a surprisingly short distance ahead of them. The effect on the defenders can well be imagined, when, as is the fact, the accuracy of the shooting is of a high order.

I see that that the Press attribute the great share of work in inventing and perfecting these barrages to Sir Henry Horne, now commanding the First Army, then commanding the XV Corps.

- (f) The development in size and mobility of our trench mortars. The Stokes and the other smaller-bore ones played a great part especially in the final bombardments of objectives. But even the new 9.45-inch mortars, which throw close on two hundred pounds of high explosive three quarters of a mile with good accuracy, were repeatedly advanced from position to position behind the attackers.

IV. The fourth new feature I have selected was the great development of tactical Bombing Work, in the clearing of won ground and the taking of lesser points, as approaches etc. Bombing tactics were elaborated and standardised to a high degree, and produced invaluable results.

I one day had the good fortune to watch the taking of two



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trenches by bombing up them in conjunction with a creeping barrage. They were two trenches leading into Mametz Wood which we had not yet got; and their capture was an essential preliminary to the taking of the Wood.

We watched the operation from the height of Pommiers Redoubt about a mile or less away. The barrage went up in front of the party with perfect regularity and accuracy, and hardly a bomb thrown fell outside the trenches to be captured.

The whole thing may have lasted a quarter of an hour, and was a complete success.

V. The fifth new feature was our Mastery in the Air. This was noticeable from the beginning of June, and divides into three headings.

- (a) The extreme bravery of our Pilots. One need say no more here than has been said in our own Press; but the enemy were by no means the least in acknowledging the superlative bravery of our men.

There was a most marked difference between them and the enemy. Our own men, unless acting under exceptional instructions, carried the war into the enemy's country with a vengeance. They took battle anywhere, and rode where they pleased. I believe the actual proportion of line crossing by the two sides was some preposterous figure near 200 to 1. That is, that for one enemy plane that crossed our line we crossed his 200 times. I can not give the actual figure, but from July to September it was enormous. One seldom seemed to see boche planes at all on our side of the line.

- (b) The Mastery of the air. Owing to the policy of the pilots which I have just mentioned, our men completely owned the air, as regards observation, air fights, and engaging troops on the ground.

When Hindenburg came to set things right in the west, there was a certain increase of German air activity: it was reported to us that he had strafed their airmen



in no measured terms. But the result was not proportionate. The bravery and dash of our pilots made up for any inferiority of machines, and more than made up.

- (c) The third feature was that, for the first time, the art of downing drachens (Observation Balloons) on a large scale was evolved. It was done by small fast planes with picked pilots ; and, on one memorable day at the end of June, in order to conceal our final preparations for the attack, a round dozen of German drachens were sent down in flames in twenty minutes. Never before had anything more than one or two been thus treated, and that only at long intervals.

From our own Corps Aerodrome, a Nieuport went up, climbing in his stride, straight for the German lines ten miles distant. At the end of the ninth minute his drachen sank in flames, at the end of the nineteenth he was landing again in the aerodrome, unruffled.

VI. The sixth new feature was the enormous development in the use of Motor Transport. Lorries were used in very large numbers indeed, and probably much further forward in the offensive than had ever been done before. In the notable shortage of light Railways they did invaluable work in the forward area. It was to the great detriment of the roads ; and much of their work has been now rightly taken by light railways. But they served their turn, and enlightened their owners as to the hitherto incredible amount of power and stamina that there is in a three-ton lorry if the emergency demands.

VII. The seventh new feature was our use of gas, gas shells, and flammenwerfer. The novelty lay not actually in their use, but in the fact that, once having been the victims of these devices, we were able to beat the boche at his own game. It has been a most notable feature of this war that it is always he who has invented the new devilries ; and always we who, coming later into the contest, have outdone him at his own game.



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VIII. Another new feature was our obtaining the mastery in Mining. Like the gas etc, in the earlier days of the war, it was we who used to get bad surprises in this direction. But on and before the Somme the position was completely reversed; and the utter success and unexpectedness of the Messines and Wytschaete mines, some of them over a year old, is a larger example of what happened on the Somme.

IX. The last new feature of the Somme consisted of the Tanks. Here again the Press has told you about all there is to say. One point is perhaps worth making.

After the great day of September the 15th, "Tank Day", when they were first used, one did not hear so much about them. There was a distinct tendency among some to say that they were a disappointment.

That I believe not to be the case at all. Since that first day they have become a routine article usable in very large numbers, and that, I think, is the only reason that they no longer get the big type in the papers.

The first German use of seventeen inch shells created just the same class of stir: nowadays huge shells are so common on land as never to get a press notice. And it is the same with the Tanks.

Naturally they have lost their first great element of surprise and will never make so big a bag of dead as they did on that day, but their efficiency remains.

From my own experience, after the attack of September 15th, the front German trenches by Flers had dead literally in heaps in them. We were inspecting them when we were caught by a stiff bit of enemy barrage, and, wishing to get down into cover, had literally to look about and choose an unoccupied spot to get down into. The ground too was littered with them that day: I think the defenders lost infinitely more than the attackers.

**5. The Fifth part of the Lecture** consists of a rough sketch of the events of the Battle, the preparations and three phases.

A. The preparations. These were commenced many months beforehand, and were gigantic. New railways had to be made,



new roads to take motor transport, many old roads and bridges had to be altered to M. T. standard.

Vast supplies of ammunition had to be brought up and stacked ready for use in the big Dumps, and new sidings made for them.

A very large number of new batteries of large calibre had to be brought up and securely dug in position and protected, and arrangements made for their moves further forward.

The Medical preparations were very great, new Casualty Clearing Stations were established with their own sidings, and new aid posts and dressing stations made.

The water supply arrangements had to be made in great detail, for an advance through a practically waterless country, save for the damaged village wells.

The Engineer preparations too were enormous, comprising many of the foregoing ones as well as the accumulation and distribution of great quantities of Engineer Stores preparatory to an advance through a devastated country.

Those may be called some of the material preparations.

An enormous amount of work had also to be done in the training of troops for the assault: this being only one of the many duties of the Staff who were "Working Overtime" for months beforehand, thinking out every conceivable detail. The work of the Intelligence Branch was very heavy.

The Preliminary Bombardment began about the 25th of June. I say "about", as there was such a continual pounding of the heavies in their registration, that the actual beginning seemed gradual.

The intensity of the bombardment was highly spectacular: at times the enemy line seemed nothing but a series of earth-fountains. One saw much go up in the air, sometimes the defenders of the battered trenches. Just before zero on July 1st, the line was hidden in a solid fog of earth-haze, through which the bursting shells showed dully.

In these days of the preliminary bombardment came the first prisoners of the Battle: men who had been unable to wait for the



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attack, whose nerve had failed. They were a sorry looking lot, but they occasioned great excitement. It must have been the first time for many a day that the little French villages had seen their enemies coming back in more than ones or twos.

Zero was at 7-30 a. m. on July 1st.

At that moment Sir Henry Rawlinson's Fourth Army attacked, and the First Phase began : that is the taking of the first German System.

The position was roughly as below :—

NORTH.

VIIIth Corps opposite Serre.

Xth Corps opposite Beaumont Hamel and Thiepval.

IIIrd Corps opposite La Boisselle.

XVth Corps opposite Fricourt and Mametz.

XIIIth Corps opposite Montauban.

Before following out the first phase it is as well to define an Army Corps, as it is not a Unit that existed before the War in our Army.

On the western front, a British Army Corps consists of from three to five divisions : with an average of about four. On one occasion my own Corps comprised six divisions, and on Tank Day five ; but the average was four. Divisions were changed as they became expended.

Whereas the Division remains, as ever, the Tactical Unit of Co-operation of All Arms, the Corps has become, owing to the great numbers of troops on the western Front, the Tactical Unit of Attack. It is seldom that one division of a Corps secures a decisive success whilst the other fails. (Normally a Corps attacks with 2 Divisions in the Line).

Its numbers may be taken at roughly 90,000 men, *i. e.* Four Divisions with quite ten thousand extra men in the way of Labour Units, Corps Artillery, Corps Engineers, and various Medical and Administrative units.

The progress of the First Phase I will take by dates.

*July 1st.*

VIII and X Corps never in.



III Corps in as far as Contalmaison, but driven right out again by counter attacks later in the day.

XV Corps well in on both sides of Fricourt according to plan ; and in possession of Mametz.

XIII Corps in possession of Montauban and its full objectives.

*N.B.*—The XVth Corps Commander decided not to go for Fricourt frontally, but to bag it from the two sides.

*July 2nd.*

III Corps get a footing in La Boissel.

XV Corps take Fricourt according to plan.

XIII Corps consolidate and straighten their front.

*July 4th.*

III Corps take La Boisselle after four days of terrific hand to hand fighting.

XV Corps take the approaches to Mametz Wood.

*July 4th and 5th.*

Very heavy counter attacks by Thiepval and north of it : all fruitless.

*July 7th.*

The III Corps again take and lose Contalmaison ; but in so doing, confront the 3rd Prussian Guard, the first arrival of the enemy Guards on the Somme.

Result, the Prussian Guard very severely handled, and 700 of them taken as unwounded prisoners.

*July 8th.*

XV Corps get most of Mametz Wood.

XII Corps get into Trones Wood.

*July 10th.*

III Corps take Contalmaison.

XV Corps progress in Mametz Wood.

XIII Corps repel continuous counter attacks in Trones Wood.

(Those went on all the week).

*July 12th.*

XV Corps get the whole of Mametz Wood.



## ***The Battle of the Somme.***

This ended the first phase : we were ready to attack the German second system.

These twelve days the fighting was utterly continuous, without rest or respite ; counter attacks were perpetual and sometimes in very heavy force : and success was only assured by the spirit of Attack being splendidly maintained by all ranks down to the lowest.

The best summary of them is in an extract from the Commander-in-Chief's despatch of the 12th July.

He says :—

“ After ten days and nights of continuous fighting our troops have completed the methodical capture of the whole of the enemy's first system of defence on a front of 14,000 yards. This system consisted of numerous and continuous lines of fire trenches extending to various depths of from 2,000 to 4,000 yards, and included five strongly fortified villages, numerous heavily wired and entrenched woods, and a large number of immensely strong redoubts. The capture of each of these trenches represented an operation of some importance, and the whole of them are now in our hands.”

It is to be noted that on July 13th our right was well in ; whereas our left was stationary, limiting the breach.

The French were splendidly keeping pace on our right again.

B. The Second Phase lasted from the 14th of July until the 15th of September : namely the Capturing of the Second German Trench System.

Zero was at 3-20 a.m. on July 14th ; and the French attacked in conjunction on our right.

By nightfall, the front of the attack having been from Pozieres to Delville Wood, the situation was as follows :—

*July 14th.*

III Corps took Bazentin-Le-Petit and its wood.

XV Corps took Bazentin-Le-Graud and its wood, the ground between that and Longueval, and part of Longueval and Delville Wood.

XIII Corps took the rest of Longueval and Delville wood,



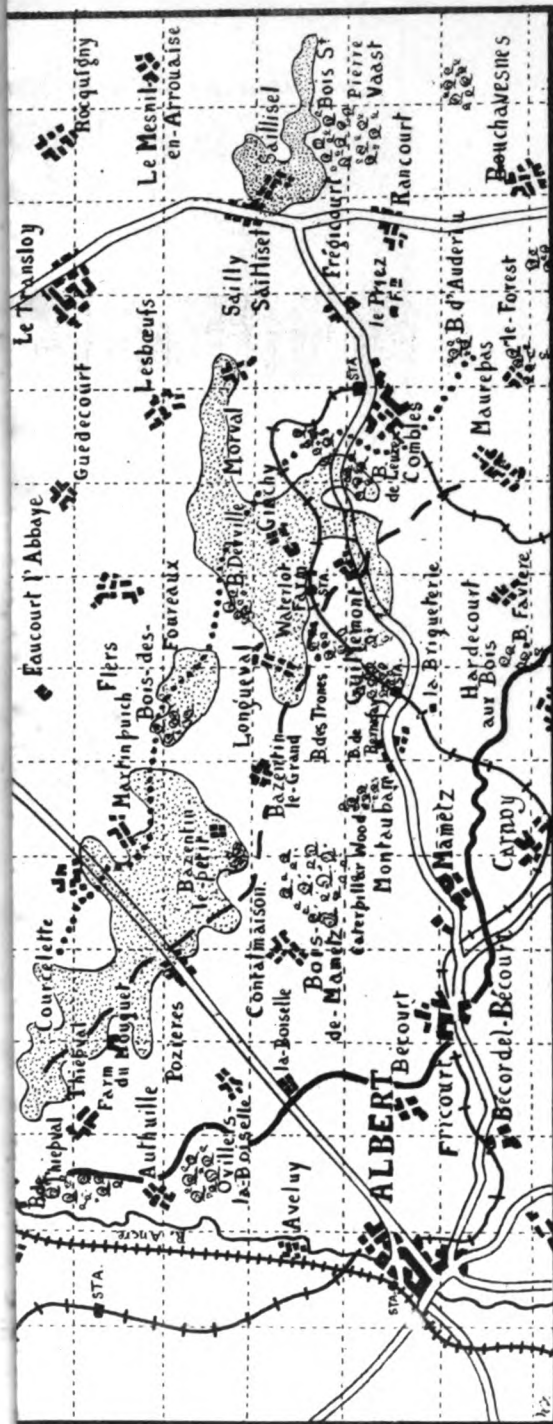
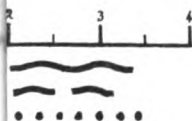


Fig No 1350. E 17



Land over 500 feet Shaded.









and finally cleared Trones wood.

This day's attack was brilliant in all parts. The enemy thought it impossible for us to attack again in force after such a short time.

We got in so far and so fast, that for the only time in the campaign of the Somme we released civilians from the conquered part of France. All the civilian population had of course been evacuated from within a certain distance of the firing line by the Germans ; but on this day we got far enough in to overtake two people who had not gone back.

True, they were only two pathetic little girls, about five and seven years old, both wounded ; but it heartened up the men who saw them, immensely. They were found in one of the Bazentins.

It was on this day that the Cavalry came into action, for the first time since 1914, as cavalry. A squadron of Dragoon Guards and one of the Deccan Horse worked up the valley between the Bazentins towards High Wood, and did very good work.

*July 15th.*

III Corps got right to the outskirts of Pozieres.

XV Corps, advancing, broke right into the Third German System in High Wood.

*July 16th.*

XV Corps withdrew their men from the Third German System in High Wood, as the salient formed was too dangerous ; but kept a secure footing in the Wood.

*July 17th.*

III Corps took Ovillers.

Here came the real beginning of the Ancre Campaign : the Fifth Army coming into position immediately north of the Albert-Bapaume Road.

*July 25th.*

The Fifth Army (Sir Hubert Gough) took most of



### The Burial of the Son.

From 1947 until 1950, the 10th was a long period of  
inactivity. The 10th was in a jumping-off posi-  
tion for the attack on the 10th system.

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1. The first of these is the fact that the Government has not been able to secure the necessary funds to carry out its policy. This is due to the fact that the Government has not been able to secure the necessary funds to carry out its policy.

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*Journal of Management Studies*, 20(6), 791-806.

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III Corps take High Wood.

XV Corps take Flers.

XIV Corps advance to conform with XV.

*September 25th.*

XV Corps gets to the approaches to Guedecourt.

XIV Corps gets to the approaches to Combles.

*September 26th.*

Fifth Army takes Thiepval.

XV Corps taken Guedecourt.

XIV Corps (with French) takes Combles.

This last date was a great day, large quantities of munitions and stores were taken in addition to the many prisoners and the ground retaken.

This finished the campaign of the Somme proper, although minor advances were made from time to time to straighten out the line throughout October.

On November 13th-17th the Ancre campaign had a brilliant finish in the taking of Beaumont Hamel and Beaucourt by the Fifth Army, with 7,000 unwounded prisoners.

That last event closed the fighting in Picardy for the winter.

**6. I now come to the Points of Interest of the battle.**—The whole thing was so extraordinarily interesting on every day of its three months, that it is very difficult to pick out things more interesting than others. I have picked out eleven things, more or less haphazard.

A. The great bravery of all arms, but in particular of the Infantry, in the face of shell fire undreamed of before the war.

Field gun shells and 4·2" shells were quite minor worries. Even the 5·9" (the "crump") sometimes became so: there was such a plethora of heavier stuff.

I have heard an Infantry Company Commander tell his platoon commanders to "Get on now, they're only crumps now".

Medium stuff, 6", 8", and 9·2" was the order of the day in front; and heavy stuff, 10", 11", 12", and even larger were far from uncommon.



**The Battle of the Somme.**

Poizieres.

*July 26th.*

Poizieres falls to the Fifth Army.

From now until September the 15th was a long period of preparation, and continual fighting, to secure jumping-off positions from which to attack the Third German System.

It was marked by severe hand to hand fighting, by furious counter attacks, (in one of these the enemy regained a footing in Delville Wood), and by battles for strong points and bits of villages that would have been considered great actions earlier in the war.

There was, however, no concerted attack along the whole line until all were ready.

The general aspect was:—

FOURTH ARMY straightening and consolidating for its next attack, advancing continually.

FIFTH ARMY pushing hard to catch up the Fourth army and be ready for its own next attack, also advancing continually.

IN SOUTH, the French always keeping pace.

Salient Dates were:—

*August 23rd.*

XV Corps drive last enemy from Delville Wood.

*September 3rd.*

Fifth Army advance a lot south and east of Thiepval and Mouquet Farm.

XV Corps get most of Ginchy.

XIV Corps (in relief of XIII) get Guillemont.

*September 9th.*

XV Corps get rest of Ginchy.

This finished the Second Phase of the Somme.

C. The Third Phase of the Somme was a brief one: namely the taking of the third German System on a selected front.

It began on September 15th, which was "Tank Day".

*September 15th.*

Fifth Army take Martinpuich and Courcelette,



III Corps take High Wood.

XV Corps take Flers.

XIV Corps advance to conform with XV.

*September 25th.*

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## ***The Battle of the Somme.***

Our men faced it all calmly, even in the open.

B. The second thing was the bravery of our wounded, at all times and in all places. I was in a position to see them long before they got back to the kindly ministrations of the Field Ambulances, much less the Casualty Clearing Station ; and they were always the same.

They provided the greatest possible contrast to the wounded enemy prisoners, both in attitude and fortitude. As a whole, the British wounded man stands pain, the other does not.

C. The Personal Equation was very strongly brought out on the Somme, and closely watched. Before this war it was sometimes left entirely to such writers as Ole Luk Oie to insist on it. On the Somme every trait of an opposing Commander was studied, and their photographs were lithographed and circulated to aid the study.

The personal Equation found its solution from the highest right down, naturally being longer of solution in the higher stages. Whereas a British Platoon commander would knock out his opposite number in perhaps half an hour or less, battalion and higher commanders would of course take longer.

I believe I am right in saying that the XV Corps Commander's opposite number was General der Kavallerie von der Marwitz, who was sent back after a matter of days rather than weeks.

Whereas Count Sixt von Armin, the approximate opponent of the Fourth army, lasted some three months, by virtue of being in higher command. Then he too had to pack up, his retreat only being postponed by the winter. I do not think he was deliberately relieved, as von der Marwitz was reported to have been.

D. Another point of interest was the way one could always tell how the day had gone, if there was an attack on, coming up from behind. If things had gone well, there was the most unmistakable medley of wounded, prisoners, and wounded prisoners, coming westwards. They would be all inextricably mixed up : the prisoners often appearing almost unguarded but in no



way desirous to escape ; and as many Germans as British coming back along the same road.

E. The fifth point of interest, which I have touched on before, was that, although it was invariably the enemy who inaugurated new forms of frightfulness and breaches of all known conventions, we were always able to pay him back in his own coin with something worse.

His was the first gas, ours is the most efficient. His were the first poison-shells, he is beaten at that game too. The only thing we have left him unquestionably master in, and of set purpose, are his many atrocities. Everywhere else we can beat him.

F. A sixth point is the introduction into fighting of the new art of Mopping Up. When attacks are launched at trench systems, the fullest preparations have to be made for dealing with the attacking force in the back.

It is a comparatively new thing altogether, and certainly was in 1916. The III Corps suffered badly from the inhabitants of dugouts on July 1st : they were never caught again. The French made a fine art of it perhaps a little before we did : they had done so much more attacking than we on the western front. The art has come to stay, and is vitally important in Trench and Fortress Warfare.

G. The seventh point I selected is the application of Mining to Field warfare. Although hitherto it has always been looked upon as a pure perquisite of Fortress warfare, it was used last year while the line was quite mobile. We mined and blew up the German in High Wood at a time when they thought we could not possibly be undertaking such operations. They may happen again.

H. An eighth point of interest concerns the Press Correspondents. It struck me very forcibly that on the Somme the Pressmen must have had extended facilities. I do not know if this was actually so ; but one certainly met them in places very much further than one had been accustomed to, and in quite nasty corners.

The result shewed itself in their writings : they had been



***The Battle of the Somme.***

allowed to see much more with their own eyes, and had had to get local effect so much less from others. So that what they write now will probably be far more accurate than in the earlier days.

I remember in particular a statement in one journal, made in 1915, that all troops were taken up to the trenches by motorbus, to keep them fresh. It was credibly put before the British Public that that was the case. At that time my own Division had had a good deal of trench work, having been continuously in the line for a good period; and not one man in my own company had ever set eyes on one single motorbus, much less come anywhere near riding in it. We, and everybody else, walked up each time and each relief, and walked back again when our time "in" was up.

But there is very little of that nowadays. The Correspondent of to-day sees with his own eyes; and from the places I have met them in, they see a good deal of the realities of the battle.

I. The ninth point, I have already gone into as a New Feature, namely our supremacy in the air. It remains perhaps to re-iterate that that was due to one thing and one thing only:— the superb bravery of our own pilots.

J. The tenth point is a brief one. It was remarkable what a degree of confidence our artillery, tanks, and other accessories produced in the attacking infantry. Great attention was always paid to keeping the fighting troops always in the best possible condition before an assault; but, had the guns not shot straight, or had the Tanks proved a failure, all previous precautions might have been wasted.

The moral of it was that the more the infantryman knows is being done for him by the other branches, the better he succeeds in the attack.

K. The last point of interest I selected, was the excellence of the Administrative departments, Supplies, Stores, Engineering, and Medical.

The Medical Services in particular impressed all who saw them. Everything that could possibly be done was done for the



wounded, and a good deal that was seemingly impossible. The Nursing Sisters always seemed to call for special appreciation. They invariably appeared to work for most hours of the twenty-four somehow !

Later on, when the Casualty Clearing Stations had moved up in the wake of advancing troops, they were perforce under canvas, with possibly a few ordinary wooden huts as well. As the winter set in, the whole atmosphere was one of concentrated mud and wet. Add to that not infrequent aero-bombing by the enemy, and sometimes long range shelling by his big guns, and the situation was not ideal for a delicately brought up woman.

But they were always the same : equally cheerful and inspiring of cheerfulness, whether one arrived as a battered hero in the middle of the morning, or as a most uninteresting sick case in the middle of the night.

I had said to me, coming under the latter category in the depth of mid-winter, "We're so sorry we can't make you more comfortable here, we're only under canvas. But you'll be all right when we get you back to a hospital."

The place would have been a Paradise after a few weeks in the front line. For the Sisters, accustomed to their homes, it was not. But they had no thought for themselves ; only for their "Cases."

This excellence on the part of the Medical Services had a very great moral effect indeed on the men. When you are getting slated by the enemy and yet know that, if you are not killed outright, every possible conceivable thing will be done for you, it is a very different feeling to having any doubts on that score.

And the morale of the men was kept the higher accordingly.

**7. Now a few words about the results of the Battle.**—These were three, for all the Objects were attained.

*Firstly*, the destruction of the Enemy's Forces in the Field. I cannot give the actual figures of German casualties, but they were enormous.

Our own were very great ; but not in proportion, since we



were the attackers. Moreover it must be remembered that if the Germans and ourselves each lose one man, we are up on the deal, as our resources are greater than theirs.

Perhaps the best summary was a German communique, by wireless if I remember right, to the effect that the Allies had expended 100 Divisions to gain a paltry few square miles of ground.

It was substantially true. But it was countered at once, by the Allied statement, also true, that the Germans had expended the equivalent of 140 divisions to lose that same ground.

Napoleon was eventually beaten for lack of men. His troubles began at Moscow, and ended at Waterloo where he had an army of veterans and nothing behind them; he had called up too many classes before.

Germany has called up all her 1918 class, and has started on the 1919 one; and the same thing seems inevitable for her.

• *Secondly*, the re-capturing of territory. On the Somme we did get back many square miles, worth perhaps twopence an acre freehold, it is true, but the sentiment is there. In the great Retreat which was the direct consequence of the Somme, we got back very appreciably more and better.

*Thirdly* and lastly, we got the initiative in the west, definitely and finally, as has been pointed out already. From now on, it is merely a question of what *we* are going to do; and not the enemy.

**8. The lessons of the Somme.**—I have selected Eight, out of the eight hundred that might easily be found.

I. Rigid Discipline and Consummate Obedience to Orders are, if possible, more vitally important than even was stated to be the case before.

It is an unassailable fact that the more disciplined troops accomplished far more, fared better, and suffered far less, than the less disciplined ones.

II. The strictest attention to detail, even the minutest, is an essential to success in the field.

It is a military platitude that far-reaching disorder can arise



from a deliberate error in one detail; and instances did occur of this nature. General principles come first, and detail afterwards. But neither can stand without the other.

III. The policy of lead beats the policy of drive. The former is costly in officers, but, when these are killed, their men go on, following the lead of the next senior, because they are used to the policy.

In the German army, where the officers and non-commissioned officers drive their men, loss or slackening of the drive produced the inclination to stop or surrender. Moreover it is far easier to overdrive than to overlead a man.

On one celebrated occasion, a battalion, brought from the Champagne Front, surrendered entire:—i.e. the 700 survivors. We met them in Meaulte headed by 15 or 16 of their officers.

They had been driven into the line with insufficient rations and ammunition and almost negligible information, and told to retrieve the battle.

They were a driven sacrifice, they knew it, and they knew of the High Priests sitting in comfort miles to eastward. Human Nature would not stand it, and they surrendered.

Had they been not driven, but led, into the line by such officers as we can produce, we might have lost two men for every one of them.

Contrast that with our platoons who go on under a non-commissioned officer or a private when the rest of their leaders are killed; and it is a good weighing up of the policy of Lead ~~versus~~ the policy of Drive.

IV. On the Somme, the spirit of offensive was successfully inculcated into all ranks, even the lowest.

Once an attack was launched, it was followed up to the last degree. The result was that the enemy was never allowed any relaxation of the pressure, and could never form up successful counter attacks in any big degree.

The successes due to this were universal, and the lesson is to teach all ranks, when they do go, to go "All Out."—or rather to continue to teach them so: and to hold all they get.



## ***The Battle of the Somme.***

All ranks must have a fair knowledge of simple field works. In consolidation this is vital: many successes or failures to hold ground won were decided simply by the fieldwork knowledge of the infantry concerned. It is merely an adaptation of the axiom that the Infantryman must be able to make his own cover. In practice, if well done, it reduces the casualties to an absolute minimum, and gives enormous confidence.

VI. Always go for a definite and limited objective, and when you have got what you have been told to get, stay and consolidate it until told to go on.

There were instances of quite large formations not heeding this, and getting involved or surrounded in consequence.

The ideal soldier will combine this judiciously with the lesson laid down as Number IV; for, in allotting objectives in unknown terrain, the higher Commands cannot legislate for all minor opportunities.

But the textbooks remain unaltered as to the forbidding of undertaking enterprises which may not only involve you unduly, but may involve other troops to get you out. And this lesson is a phase of that.

VII. In launching an attack, the co-ordination of all aims must be worked out to the smallest detail. Under Co-ordination too, include its result, Co-operation.

As far as practicable, each unit must know what neighbouring units are doing and are to do, as also its own supporting units and branches of the service, guns, planes, etc.

Moreover it is difficult to spend too much time in working out details of communication between the various troops. These days, when an Infantry Commander can signal, *via* his Contact Aeroplane, back to his supporting Heavy Artillery, and get the particular point which is hanging him up knocked out within a matter of minutes almost, this has reached a very high degree already.

VIII, and lastly. There is only one way of getting a job of work done : whether it is the capturing of a country or the digging of a little hole.



On the Somme, officers and men alike from the highest to the lowest were given whatever they asked for to do their tasks, provided the requests were in all common sense.

Then they were judged by results, and by results alone. There was no time for ineffectual good intentions.

On the other hand, if a man made a reasonable request, and the necessary men, supplies, stores, materials, ammunition, or facilities, etc. were refused owing to some trifling technicality, or still worse, some clerical objection, there was a very quick and effectual funeral not for the man, but for the refuser.

The whole campaign was managed in a spirit of trust, and never in one of deliberate mistrust.

The eighth lesson consolidates down to this: Trust your man and give him what he asks for. If you have trained him properly he will not betray your trust, neither will he ask for unnecessary things. Judge him by results alone; if he fails once, through his own fault, dismiss him.

But if you or yours have trained him properly he will not fail.

All that was done on the Somme, and the officers and men did not fail.

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# **PRAOTICAL NOTES ON THE SUN, MOON AND STARS.**

BY

J. WILLOUGHBY MEARES, F. R. A. S.

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The world wide character of the present war has probably caused millions of people to study that much neglected subject, geography, who previously never opened an Atlas even if they possessed one. And while observers, who are outside the tumult, follow the course of events on a large scale map, their fellows—still to be counted by millions—have found out from hard experience the value of terrestrial map reading and all that it implies. In the public schools a smattering of physical geography is taught, but, from its association with the Science Master, the subject is usually considered a younger brother to “stinks” and is taken no more seriously. Ordinary geography is assumed—quite erroneously—to have been learned at the preparatory school, and is seldom included in the curriculum at all. The very fact that a terrestrial globe is now seldom seen outside a museum is proof enough that the subject has long been considered archaic, for it is the only method by which a real sense of proportion can be obtained. Not one person in a hundred understands the projections ordinarily used. One may go further, and say that a knowledge of the world we live in and the laws that govern it has until recently been of very little interest to the present generation. It follows that any acquaintance with other worlds, obeying similar laws, is left to the astronomer and the student of psychical research—with the astrologer bringing up the rear of this strange conjunction. If a room full of people of average education be questioned as to the motions of the sun, moon and stars it will be found that not half a dozen have any intelligent idea on the subject; and yet it is one of practical importance both to the soldier and (more especially) the sailor. Beyond the mere fact that the sun regulates our day and our seasons, and the moon our tides, we seldom care to go; we do not even enquire as to the why and the wherefore of these pheno-



mena, much less make full use of them.

Not long ago an army officer, a firm believer in the influence of planetary conjunctions on human affairs and in the swaying of the weather by changes in the moon, remarked to the present writer that astronomy was merely an abstract science, and of no practical value! A naval officer, with the Nautical Almanack for the year 1920 already in his cabin, would perhaps be able to enlighten him. It is not however proposed to attempt the impossible in this paper, by trying to compress a treatise on astronomy into a few pages; it is merely intended to explain a few matters which may prove of interest and utility, and in order to make these intelligible a little elementary text book material must be introduced.

For our present purpose it must suffice to state that the **The Solar System and the stars.** solar system, consisting of the sun, the planets—including the earth—with their attendant satellites, and cometary bodies, is a compact little family at almost infinite distance from the nearest “fixed star.” Of course even planetary distances are vast on any terrestrial scale, but the above view must be taken in order to obtain any sense of proportion. That it is not very inaccurate will be realized when it is stated that from the base line of the earth’s orbit, 180 million miles long, the greatest displacement (parallax) of any “fixed star” is about half a second of arc. The “fixed stars” themselves are really travelling at great velocities, many miles a second, but only the most refined observations will demonstrate the movement at this distance of from 3 “light years” upward.

The earth rotates on its axis once in 24 hours, from west to east, and the effect of this is to cause all **Diurnal motion of sun, moon and stars.** celestial bodies—sun, moon, planets, comets and stars—to appear to move in the opposite direction round the earth, from east to west. That the sun so travels is apparent to all, but it is a fact that many people are unaware that the moon and the stars do so also. Now if this rotation of the earth were the only movement occurring in the universe it would follow that every celestial body would arrive at precisely the same spot



in the heavens at intervals of a day. Actually there are many other movements simultaneously occurring, which modify the condition stated to a greater or less extent. To the ordinary proofs of the earth's rotation, given in every book, it may be interesting to add one seldom mentioned. If a ball or other spherical object be dropped from the centre of a deep vertical pit mouth it will not reach the bottom of the pit at the centre; in fact it will strike the side at a comparatively shallow depth. For its radial velocity in space, due to the earth's rotation, and common to it and the top of the shaft, will be maintained as it falls; when it has dropped a few hundred feet the radial velocity of the shaft at that point will be sensibly less, and the falling body will overtake it and strike the side. This well-known experiment has an interesting bearing on the reverse problem, of a projectile fired more or less vertically upward, where the distance from the centre of the earth, and consequently the earth's radial velocity, is increasing.

A correctly adjusted sundial indicates the length of a true **The Sun's apparent diurnal movement.** solar day, *i.e.* the period embraced between two successive returns of the sun to the meridian as the earth rotates. This period however is not constant, but varies from season to season, and its use in every day life would be inconvenient. Time as shown by a good clock indicates what is called "mean solar time" and gives us the civil day. It represents the mean length of all the solar days (of variable length) in the year. Instead of the sun actually arriving on the meridian at intervals of exactly 24 hours there is a swing of about a quarter of an hour on either side, known as the "equation of time". That is to say, the sun's apparent movement is like that of an uncompensated watch, sometimes going fast and at other times slow as compared with a standard pendulum. When true solar time is required, or when mean time is to be found from the sun, a correction has to be made for the "equation of time". The sun and the clock only coincide four times in the year, on about April 16th, June 16th, September 1st and Christmas day; on these days the sundial



and clock agree. Whittaker's Almanack will tell the curious how much the sun is "before the clock" or "after the clock" on every day of the year, but before this can be further explained a word must be said about the earth's annual journey round the sun.

The earth travels round the sun once in a year, with the

**The Sun's apparent annual movement.** consequence that the sun appears to make a complete circuit of the stars (through the

the twelve signs of the Zodiac) in the same period. Bearing in mind what has been said above of stellar distances it will be realized that throughout this enormous circuit no visible difference is seen in the shape of the constellations, as the relative view point is hardly varying at all compared with that distance.

The stars are invisible to the naked eye in the daytime, but if their positions are observed at the same hour at intervals of a month they will be found to have shifted through an angle of  $1/12$  of the complete circuit, towards the west, setting a little earlier every night. For this interval of a day or a month is regulated by the sun's successive appearances, which result from the combined annual and diurnal movements of the earth. At the end of a year, at the same hour, the stars are back in the same position again.

Now if the earth's revolution round the sun were performed in a circle, the rate of travel in the orbit would be exactly constant; but as the path is an ellipse the rate of progress alters; when we are nearer the sun we travel faster, and *vice versa*. But meantime the earth continues to turn on her own axis with exact regularity. The result of these two motions, one even and the other variable, is that the sun appears sometimes a little ahead and sometimes a little behind his mean position. Hence the equation of time.

Once again bearing in mind the vast distances of the stars

**Diurnal movement of the stars.** and the fact that the earth's rotation on its axis is absolutely constant, it will be evident that every star does in fact always arrive at the same spot in

the heavens after an exact interval of time, so far as ordinary



persons and even ordinary telescopes are concerned; but this interval is a sidereal day of about 4 minutes less than the mean solar day by which our clocks are regulated. The reason for this is that the earth, in the course of the day, has travelled about  $\frac{1}{365}$ th. part of its annual revolution round the sun; there is therefore a displacement of the angle from which the stars are seen to this extent daily. In the course of a year this amounts to the whole  $360^\circ$  or 24 hours, and the stars will be back in their original position at the same hour; but in the meanwhile there is a difference of about 4 minutes (*i. e.*  $\frac{1}{365}$  part of 24 hours) every day. So every star appears to be pursuing the sun, and advances with absolute regularity a little towards the west every night. Note the position of any star from a window, over a tree or any other fixed object: the nightly movement will be seen in a few minutes, and the annual movement (observing at the same hour) in a few days. By this means, though with every refinement of observation, astronomers keep our time right. Their clocks are regulated to keep "sidereal time" *i. e.* while beating standard seconds their hands complete their circuit not in 12 hours, as most ordinary clocks do, but in 23 hours 56 minutes 4 seconds of mean time. Thus at mean noon the sidereal time may be anywhere between 0 and 24 hours, according to the time of the year.

Now the earth's axis of rotation always points in the same direction, so far as we are concerned with it

**The Poles of the heavens.**

in this paper, and that direction is North and South. If therefore any star existed exactly in line with the axis, at the North or South pole of the heavens, that star would remain stationary. Every other star would, and in fact does, appear to revolve in a larger or smaller circle round this point, according to its apparent distance from the pole. Unfortunately there is no star exactly situate at either pole, but the North star (Polaris) is less than  $1\frac{1}{4}$  degrees from the actual North Pole of the heavens, and there is an inconspicuous star even closer to the South Pole.

Dealing with the northern hemisphere, it will now be plain



that to a man situate at the north pole—90 degrees North latitude—the pole of the heavens would be exactly at the zenith—90 degrees altitude—and the pole star would make a small circle round it every day. At the equator, latitude 0 degree, the pole would be true North on the horizon, elevation zero, and the pole star would be just above or below the horizon according to the time of day. Therefore at any other place the elevation of the pole will be the same as the latitude of the place; for example, in Simla it will be 31 degrees.

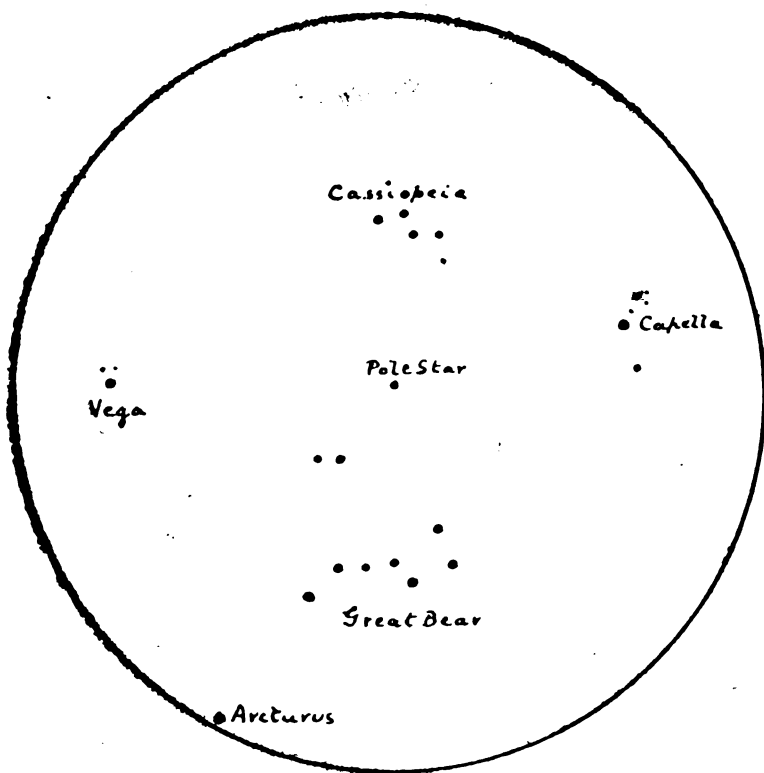
Few people learn to distinguish any of the stars by name;

**A very simple star** they see a map of the sky in a newspaper, **map.** with hundreds of stars on it, and conclude it to be an impossible task. But for most practical purposes it is sufficient to be able to identify about half a dozen bright stars or groups. The map reproduced here shows the north pole at the centre, and the pole star practically so, with the two “guardians of the pole” between it and Arcturus. The Great Bear (or Plough) has its tail pointing at Arcturus (one of the brightest stars in the sky); and the two well known “Pointers” indicate the direction of the pole star. On the opposite side of the pole from the Great Bear, *i.e.* 12 hours distant from it, is the constellation Cassiopeia, the five chief stars of which are variously described as resembling the letter W or an arm-chair. Both these well known configurations, in the course of their journeys, become upside down at times; but they are always easy to recognize. Even in Northern India both in turn sink so low when under the pole star as to fall on or below the horizon, but one or the other is always visible on a clear night; for when the Bear is setting in the North West (as at present) Cassiopeia is rising in the North East, and *vice versa*. The map shows only two other groups. Following after the Great Bear in its nightly procession is Vega, a brilliant white star, to be identified by the fact that two faint stars near it form with it an equilateral triangle. (Sharp eyes can distinguish one of these as “double” without a glass). Vega is about 90 degrees or 6 hours distant from the middle star of the Plough, and the same from Cassiopeia, and is



**Notes on the Sun, Moon and Stars.**

high up overhead now in the evening. Following Cassiopeia, again between it and the Great Bear, but on the opposite side of pole from Vega, is the brilliant Capella, with a group of 3 small stars (the Kids) in a triangle near it for identification. These are the most conspicuous, and easily learnt, stars in the polar region; and it is really unnecessary to learn the names of others in order to make use of them.



It is a common thing to hear it stated that the North Star  
**Finding North by the Stars.** can be found by such and such a star or constellation,—Orion for instance is often quoted—but from what has been said above it is evident that the first condition is that the star must be above the horizon, and this may often not be the case ; with Orion it is in fact generally not so. In Simla, for example, latitude 31 degrees, any star



within that distance of the pole will be above the horizon all the 24 hours, but stars beyond that distance will rise and set, and will be beneath the horizon for a longer or shorter period. A star 149 degrees from the pole (180-31) will just graze the South horizon and no more. One 59 degrees from the pole (90-31) will (at the right time) pass exactly overhead. Castor is nearly in this position, and Vega (see map) not very far from it. Incidentally this throws an interesting light on the popular fallacy, perpetuated by no less distinguished an astronomer than Sir John Herschell, that "the stars" can be seen in the daytime from the bottom of a deep shaft. To be visible at all a star would have to be a bright one, and precisely overhead, as the mouth of such a shaft would only subtend an angle of 1 degree or less. But supposing a star to fulfil these conditions, it would pass across the field of view, quite invisible in point of fact, in about 4 minutes and then remain away for 24 hours. The illusion arose, no doubt, from the sky showing through the very small opening of a deep pit and appearing like a bright star.

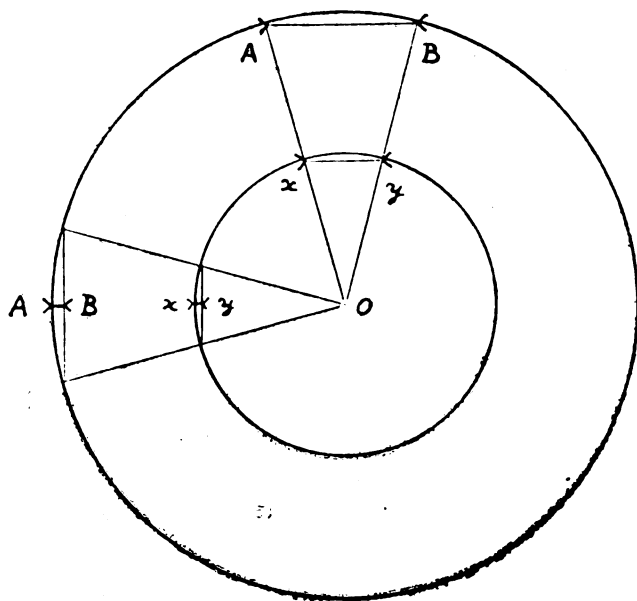
To any one who has taken the trouble to identify the few objects shown on this map it will be interesting to know that when either Cassiopeia or Arcturus is near the meridian the Pole Star will also be there, and therefore true North within a few minutes of arc. When Vega is seen near the meridian, as at present, the Pole Star will be about  $1\frac{1}{4}$  degrees to the East of North. When Capella is near the meridian the Pole Star will be about 1 degree West of North, say true bearing 359 degrees.

Now as the earth rotates through 360 degrees in 24 hours it follows that all the apparent movements in the sky due to that rotation alone must be similar, *i. e.* at the rate of 15 degrees an hour or 1 degree in 4 minutes of time. The actual visible displacement of any particular object with respect to the compass direction on the earth depends, however, on its distance from the pole, which is stationary. An object 90 degrees from the pole has the largest apparent linear movement. From this it follows that in keeping direction by the stars it is advisable, when pos-

**Varying displacement  
of stars in course of  
diurnal motion.**



sible, to choose one near the pole rather than one a long way off; *i. e.* it would often be better to keep one of the circumpolar stars on the right or left hand rather than to use as a guide a star in the desired direction, but at a greater distance from the pole. But the problem by no means ends here. Suppose two stars are considered, one between the pole star and the zenith and the other at the same altitude as the pole star, whether East or West. If they are at the same apparent distance from the pole star (as in the case of the same star, at intervals of 6 hours) they will move over *the same amount of sky* in a given time; but whereas the former is moving horizontally, across the meridian, and therefore across our line of sight, the latter is travelling more or less vertically, and is therefore not sensibly altering its compass direction. The accompanying illustration will make this clear.



The centre O represents the pole, and the two pairs of radial lines thence each enclose an angle of 30 degrees, equivalent to 2



hours of the diurnal movement of any star in the circles. The two concentric circles represent the paths of two stars at 30 degrees and 60 degrees from the pole respectively (the two pointers are a little over and under 30 degrees, while Arcturus is 50 degrees from the pole). Now consider a star travelling in either of these paths when it is on the meridian—as shown at the top of the figure—and its displacement across the line of sight of the observer, situated in front of the diagram, is shown by the chords AB and XY. It is almost as great as the arc, and the compass direction of the stars would vary about 15 degrees in the near one and 30 degrees in the distant one, in two hours. Now this at first sight is confusing, for it has already been said that both move 30 degrees in that time; but that is their movement *in their circles*, round the pole. The pole star itself moves round its 360 degrees in a day, but as it is only  $1\frac{1}{4}$  degrees from the poles the actual diameter of this circle is only  $2\frac{1}{2}$  degrees in relation to the observer; for to the observer a degree measured in the sky, as on the ground also, is  $\frac{1}{360}$  of the circle of the horizon, or  $\frac{1}{90}$  of the angle from the zenith to the horizon. These two angular measures are apt to be confused. The scale of the drawing holds good however.

Six hours later or earlier the position of the stars will be on a level with the pole; they are so shown on the left of the figure. Their movement will now be almost vertical with respect to the observer; and the change of compass direction in two hours will be only about 1 degree and 2 degrees for the two stars, as shown by the same lettering. It follows from this that the most favourable stars for keeping direction are those at about the same altitude above the horizon as the pole star. No mention of this can be traced in the books, but it is of considerable utility in practice. It is of course unnecessary to know the name of the star, or anything about it. For example, suppose it is desired to march a given distance at night on a true bearing of 315 degrees, *i.e.* 45 degrees West of North, without a compass. Draw a thick line on paper as a direction line, to march on. Set off another ray at an angle of 45 degrees to the right or East of it—*i.e.* lay out the



angle counterclockwise instead of clockwise. Now point this latter ray at the pole star—or 1 degree to East or West of it as explained above, to get true North—then the thick direction line gives the desired bearing. Any star to which that line points will serve as a guiding star, but the more nearly its altitude approximates to that of the pole star the longer will it remain serviceable. At any time a fresh sight can be taken and a new star chosen, if the distance to be travelled is great or the star is unfavourably situated. Similarly, on the same paper, other bearing rays II, III etc. can be plotted, to be used successively, all rays emanating from the same centre, just as is done with the prismatic compass, except that true and not magnetic bearings are plotted. If a star near the pole and about the same altitude does not suit the direction of march then any star not too near the horizon may be taken; but it should be remembered that a star about 90 degrees from the pole has the largest motion; and also that motion is greatest in relation to compass bearings when the star is on the meridian. These conditions should therefore be avoided.

It is useful to know that the apparent angular diameter both of the sun and the moon is practically  $\frac{1}{2}$  degree — about the same angle that an ordinary lead pencil subtends at arm's length. In this connection it may also be mentioned that an object of any given diameter will subtend an angle of 1 degree at a distance of about 57 times that diameter, or  $\frac{1}{2}$  degree at about 115 times its diameter.

This is equally true of the moon or a green cheese. Thus the moon is 2160 miles diameter, covers an angle or  $\frac{1}{2}$  degree, and is distant 240,000 miles (mean). An average man will subtend half a degree at about 200 yards; if he were a 6 foot specimen the distance would be  $115 \times 2$  or 230 yards.

Every boy scout is taught to find the direction from the sun by means of his watch, with a vague caution that the method is unreliable in the tropics, but the explanations given are seldom clear. The converse operation, of setting a stopped watch by means of a compass, is seldom



mentioned. In the neighbourhood of the Arctic or Antarctic Circles both operations can be relied on fairly, whereas at the equator both are useless.\*

Take the extreme case of a man at the North pole at the time of the equinox, when the sun is vertically over the equator and just visible at both poles. The sun would then appear to travel round the horizon at constant altitude (actually of course the altitude would slowly change as the days went by) ; and it would move through a complete circle in 24 hours, or at the rate of 15 degrees per hour *horizontally*. So the shadow of a vertical stick would move round exactly like the hour hand of a 24 hour clock, such as the astronomer uses. It would be a fairly accurate time keeper provided the true time were known to begin with. Here the hour hand of a 24 hour watch would constantly cover its own shadow when once set ; while an ordinary 12 hour watch would travel double the pace of the sun. Of course from this point the *only* true bearing would be due South, and magnetic bearings (owing to the non-coincidence of the rotational and magnetic poles) would be complicated. In fact neither watch nor compass would be required by our boy scout. This limiting position is mentioned however because it follows that for some distance from the pole the conditions would not vary greatly. In Great Britain, for instance, the watch method is fairly correct for finding the South ; and if the true South is found by the compass and its correction (which the boy scout generally forgets) the approximate time can be found, and the watch set, by measuring the true bearing of the sun from it, and allowing 1 hour before or after noon for every 15 degrees.

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\* Both problems are of course soluble, but not by simple methods such as are here dealt with. If the sun's altitude is measured by means of a sextant, and its azimuth by means of a prismatic compass, from a place where the latitude and longitude are known, the time can be found to within less than half a minute and the compass variation to about a half a degree. But azimuth tables from the Nautical Almanack and the solution of spherical triangles are involved. An article on the subject by the Rev. F. C. Lees appears in the Journal of the British Astronomical Association Vol. XXVII No. 8.



Let the observer be now transported to the equator and a **Conditions at equator.** very different set of conditions prevail. To take an extreme case, at the equinoxes the sun will rise due East, pass overhead, and set due West. Its shadow will therefore merely shorten and lengthen in the same straight line. Clearly the only true bearings of the sun will be 90 degrees and 270 degrees; due East and West. At noon the shadow will instantaneously alter 180 degrees from the former to the latter. Here the time can be obtained by measuring the *altitude* of the sun, as it both climbs up and drops down *vertically* at 15 degrees to the hour, completing its half circle in 12 hours, between 6 and 18 hours by the clock. The direction of true North and South is of course at right angles to the shadow line. Here again, both watch and compass can be dispensed with by the ordinary mortal who can measure an angle and draw a perpendicular.

At any other season than the equinox, and at any latitude **Intermediate latitudes.** between the limits dealt with, the conditions are intermediate between these extremes. The movement of 15 degrees per hour in the sun's path is not at that rate either horizontally, as at the pole, or vertically, as at the equator. Caution is therefore necessary before the watch and compass methods are used. For instance, in Northern India in June, the sun's shadow travels well over 90 degrees between 11.30 and 13.30 standard time; *i.e.* over 45 degrees per hour instead of 15 degrees, whereas in the early morning or evening it takes 2 hours to travel 15 degrees. The sun itself, in its apparent path, is not playing any tricks; but as the path is varying but little from the East and West line the shadow appears very erratic.

If an upright is fixed, and the length and direction of its **Shadow methods.** shadow are marked off at intervals before and after noon, the curve through these points is instructive. By taking two points on the curve where the distance from the upright, *i.e.* the length of the shadow, is the same, and drawing circles of equal radius from these points, the intersection will fall in the direction where the shadow was shortest, *i.e.* apparent local noon; and the line from the upright to this point will be in



the meridian. But it must be remembered that this will *not* necessarily be noon by watch. There are two corrections to be made ; first for the equation of time already mentioned, and secondly for the amount by which our standard time differs from local time.

Greenwich is the standard meridian for the world, and Indian Standard Time is  $5\frac{1}{2}$  hours East of Greenwich mean Time. This is equivalent to  $82\frac{1}{2}$  degrees East longitude. Jeypore and Cocanada are almost at this longitude, so standard and local times are about the same there and at other places due north or south. At places in other longitudes there is a greater or less divergence. For instance, Simla is about 77 degrees East longitude, or  $5\frac{1}{2}$  west of the Indian Standard longitude. This is equivalent to 22 minutes of time. The sun therefore comes to the meridian 22 minutes later in Simla than in Jeypore. When the gun tells us it is 12 noon (standard time) the real local mean time is 11.38 only. If, on the other hand, the mean local time is found by a sun dial to be 12 noon then Standard time will have moved on to 12.22, which a watch should show. "Daylight saving" must also be corrected for, where it has been adopted.

If a curve of the shadow of an upright is made, as explained above, with the hours marked on it, it can readily be used for keeping direction by the sun in the day time, instead of a compass. On horseback—*e.g.* in a chart and compass race—this method is most useful, as it can be applied without halting, whereas the swing of a compass needle takes time to settle down. Of course the curve taken at any time will become inaccurate after a week or two, as the sun's course alters with the season. The method is based on a crude form of sundial. In a true sundial the gnomon that casts the shadow lies in the meridian and is fixed at an angle dependent on the latitude of the place. A properly calibrated hour scale (equivalent to the above shadow curve) will then remain correct throughout the seasonal changes of the sun's altitude, and only corrections for standard time and equation of time are



necessary.

Hitherto the sun and the stars have been considered. It is unnecessary to deal at length with the planets, as the layman can seldom distinguish

#### **The Planets.**

them from the fixed stars. Mercury is not often seen by the uninitiated, and the two most distant major planets are practically invisible without a telescope—Neptune entirely so. The movements of Jupiter and Saturn with reference to surrounding stars are slow and stately, and if they are used by mistake for stars no serious error will result. Venus and Mars travel faster in their orbits round the sun, and their movements among the stars are easily perceptible to the naked eye at the end of 24 hours; but so far as marching on either of them is concerned this inherent movement is entirely masked by the apparent diurnal motion they share with the stars.

The moon deserves notice all by herself, because her motions have (in varying degrees) long puzzled both the mathematician and the man in the street.

#### **The Moon.**

The moon is incomparably closer to us than any other body; so much so that her parallax is noticeable from a comparatively small terrestrial base. Thus, when she passes between us and the sun the shadow of the solar eclipse is quite a narrow band; and not even a partial eclipse is visible at some distance away from the centre of totality. Now the moon revolves round the earth once in 27·3 days; but at the same time the earth is rotating on its axis once in 24 hours and revolving round the sun once in 365½ days. So instead of the moon arriving at the same spot in the sky at practically the same time on successive nights, like a star, she is rapidly dropping back and rising later every night. At the end of a month she has completed her circuit, from new moon, through the "first quarter," full moon, "last quarter," back to new moon; and she arrives near her original position again at a given hour. This easterly movement relative to the stars can be seen in a hour or so by any observant person (much sooner if a bright star is near by) while both moon and star are travelling Westward in the course of their diurnal jour-



ney. She comes on to the meridian 54 minutes later every night.

Owing to the combination of the moon's journey round the earth and the earth's orbit round the sun the lunar month or period from new moon to new moon is not the same as that of her revolution; it is in fact about  $29\frac{1}{2}$  days. The moon is the subject of many popular fallacies besides that of her alleged influence on the weather and on persons. Many people are so unobservant as to believe that the moon and the sun cannot be seen at the same time. Most people are convinced that the moon (and the sun too for that matter) subtends a greater angle when rising or setting (especially at Harvest Moon) than when overhead, whereas such slight difference as there is is in the opposite direction. All poets and painters are convinced that they can drag in the moon when they like and make her look as they please. The moon was new on the day of the battle of Corunna, and therefore invisible on the night following, when we are assured that Sir John Moore was buried by its "misty light" with the adventitious aid of a "lantern dimly burning." It was once the writer's privilege to hear a lecture by the late Sir Robert Ball, in which he assured his audience that some people were convinced that the poet would in the end prove right and the astronomer wrong.

Every one knows that Easter is determined by the occurrence of the "ecclesiastical full moon", but it is not so generally known that this moon is a fiction! As the late Superintendent of the Nautical Almanack remarked in a lecture on the subject, the ecclesiastical moon exists neither in the heaven above nor in the earth beneath nor in the waters under the earth. But it is a necessity, for if the real moon were used Easter would occasionally happen at one date in Rome and a month later in New York.

A moment's thought will show that, as the moon's light is entirely derived from the sun, (a hemisphere being always illuminated) a line drawn from the sun at any time must cut the line joining the horns

**Phases of the moon.**



of the moon at right angles. Therefore the setting crescent new moon, in Northern latitudes, must have its bright convexity either somewhat towards the North, or (at the extreme) pointing almost vertically downwards; for the sun is meantime sliding away to the North. The convexity may therefore be more or less to the right but never to the left in a picture of the Western evening sky. For the same reason, (though painters seldom favour the early morning), the rising crescent moon, a few days before new moon, must also have the illuminated face towards the North, but now on the left of the picture of the Eastern morning sky. The conventional calendar signs, presently referred to, follow these positions. On the equator the moon is always nearly "lying on her back," while in the Southern hemisphere the above positions are reversed; but most poets and painters at present hail from the North. The actual angles are of course dependant on the date and the age of the moon, and do not vary according to the coming weather.

The correct appearance is more often than not reversed, and the apparent size of the moon is almost always enormously exaggerated. As already stated, it is but half a degree. An enlarged photograph of the scene of the picture, from the same viewpoint and to the same size, would show the moon as a mere pin head. The statement as to the derivation of the moon's light from the sun must be qualified as regards the faint illumination of the dark portion of her surface by "earth-shine," when the old moon is seen "in the new moon's arms." To an observer on the moon it is about full-earth at this time, and the faint light is derived from the sun, truly, but by reflection from the earth's surface. It is common to hear the incorrect supposition that this beautiful phenomenon is due to the earth's shadow obscuring the moon's light, which of course can only happen at the time of full moon, in lunar eclipse. During such an eclipse, when the moon is completely immersed in the earth's cone of shadow, she is nevertheless illuminated to a greater or less degree; but here the explanation is that the sun's light is bent or refracted by the earth's atmosphere into the shadow cone, giving



a red glow like that of a sunset.

Every one knows the story of the farmer who was taken in **Calculating the moon's** over a bargain because the middleman said **age.** he was using "last year's ready reckoner."

Real mistakes however may happen—and in fact do—from accidentally picking up an old calendar, or from not knowing the **signs** used in calendars for the phases of the moon. The following useful method of determining the moon's age is easily committed to memory:

From the year subtract 1911; multiply the remainder by 11; and from this product deduct as many multiples of 30 as are required to bring the result below 30. Call this X. Call the day of the month Y. Take a number for the month, Z., as follows.—

| Jan. | Feb. | Mar. | Apr. | May  | June |
|------|------|------|------|------|------|
| 0    | 2    | 0    | 2    | 2    | 4    |
| July | Aug. | Sep. | Oct. | Nov. | Dec. |
| 4    | 6    | 7    | 8    | 9    | 10   |

Add  $X + Y + Z$  and, if the result is over 30, deduct 30. The result is the age of the moon from new, correct within one day.

Thus take the 18th August 1917.

$$1917 - 1911 = 6 \text{ and } 6 \times 11 = 66$$

$$X = 66 - 60 = 6$$

$$Y = 18 \quad Z \text{ (August)} = 6$$

$$6 + 18 + 6 = 30$$

And so, as new moons recur at intervals of practically 30 days, it will be new moon. The calendar shows that it is new moon late on the 17th.

Or, again, take 4th January 1912 and we have  $11 + 4 + 0 = 15$ , showing it to have been full moon then.

The moon is invisible until she is about 36 hours old, and sets very soon after the sun for some days later. At the "first quarter", when there is a 7-day old half-moon (*not* a crescent as is often believed, owing to the fact that a white crescent is used to denote this phase in the calendar) the moon sets about midnight. The 15-day old full moon (denoted by a plain circle)



rises about the 6 p. m., souths at midnight, and sets about 6 a. m. To digress for a moment, the "Harvest Moon" and the "Hunter's Moon" are so called because in high latitudes the September and October full moons rise at about the time of sunset for several days in succession; only about 15 minutes later each night. This is not due to any vagary on her part. The sun takes 5 weeks to pass over as much of his path (the ecliptic) as the moon races over in 3 days. Now the September full moon is in the position in the ecliptic of the March sun, and a reference to the calendar will show that in that month, in Europe, the rising of the sun is also varying very little. That part of the ecliptic makes a comparatively small angle with the horizon, so the moon rises more to the North each night, at almost the same time. To continue, the 22-day old moon, at the "last quarter", again shaped half-moon but conventionally denoted by a reversed black crescent, rises about midnight, and Souths about 6 a. m. After this, as new moon is approached there is not much useful moonlight. The hours mentioned here vary considerably with the season and the latitude. They do not however vary enough to justify well known novelists in introducing the crescent moon at midnight or the new moon in the early morning. The moon is not so fickle a lady as students of the arts imagine.

The amount and duration of moonlight available varies considerably, according to her position in the sky. The moon's path round the earth is not exactly in the same plane as the earth's path round the sun, or there would be solar eclipses at every new and lunar eclipses at every full moon; but it is not very different. Now the sun's height above the horizon at noon varies from season to season, owing to the tilt of the earth's axis, completing its cycle in a year. The moon runs through more or less the same cycle in a month. It is therefore not difficult to realize that the height to which the moon will rise, when she culminates in the South, can be foretold from the time of the year and her age. Thus at full moon (or thereabouts) the moon, half a month old, will be in the position



of the sun half a year earlier or later; opposite to him in the sky; rising when he is setting. If it is now summer the moon will be at the sun's winter altitude and conversely. In spring or autumn their altitudes will be about the same. At the first quarter—when the moon is a quarter of a month old—it will be in the position the sun will occupy 3 months (or a quarter of a year) later; if it is now summer the moon will be at the sun's autumn altitude, and so on round the seasons. At the last quarter similarly the moon will be in the sun's position 3 months earlier. Naturally when the altitude (of either sun or moon) is high the hours above the horizon will be longer than when the altitude is low. In the latter case the hours of rising will be later and of setting earlier than in the former.

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## ***SOME NOTES ON THE TURKISH TRENCHES AT SANNAYAIT.***

BY

BT. MAJOR W. H. LANG, 16TH CAVALRY.

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After taking the Sannayait our advance was so rapid that only a hasty walk round the Turkish trenches was possible. It was the writer's fortune, however, to see the first two Turkish lines after their capture before they had been completely consolidated by us, but even then they had been so badly knocked about by our shell and mortar fire, and the process of converting the second line from a Turkish trench into a British one had progressed so considerably, that the original dimension of either line was not easy to estimate. A short description of the surrounding country may interest.

Roughly speaking the Turkish position ran North and South. The Tigris flowed at right angles on its Southern Flank while the Suwaika marsh protected it from the North. At the time of our attack in February the waters of this marsh were lapping against its northermost Trenches.

The country is absolutely flat, broken only by the parapets of our respective Trenches.

Our fifth Trench was provided with an exceptionally high parapet into which were arranged observation posts. These posts gave us a command of some 8 feet, but owing to their visibility were unhealthy spots. The height of this parapet defiled the ground behind it and allowed us to move about in moderate safety except from above and an occasional shrapnel.

The river bank was fringed for some 100 yards with thick undergrowth. This was particularly the case in "no mans land" where it reached a height of some four feet.

Our respective front lines were from 80 to 150 yards apart.

"No mans land" itself conformed to the rest of that part of Mesopotamia. It was quite level but pitted badly with shell holes while the river edge was covered for some 100 yards







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with thick undergrowth. This undergrowth was barely an obstacle.

It was the cockpit of many a bloody affair of bombers, and snipers always could be found lurking in it both night and day.

Owing to its thorns it was a most unpleasant strip to crawl about in.

For the rest, shell holes formed the only cover between our front lines. Not the vast shell holes of Flanders, only craters some four feet deep.

From the river to L 10 Turk had no wire entanglement standing; of that our artillery observing officers took good care.

The Turkish front line showed once again the strength of  
**The Turkish Front** an irregular trace. Aeroplane photos led us  
**line.** to expect an irregular Trench but not such  
a one as this.

In general outline it was a wavy line with salients covering re-entrants but beyond that there was nothing regular. No two firebays were the same length or even depth, no two dugouts the same size or situated in the same part of a bay, no two traverses were of the same thickness and even the breadth of the trench varied very considerably.

The front line itself was a single trench with no inspection trench behind it. In some places over 10 feet deep, in others little more than 6 feet. In breadth it averaged five feet but was much narrower at the traverses.

Revetments of all kinds had been improvised. Sandbags, Flour sacks, brushwood, marsh reeds, rabbitwire all played their part.

The parapet gave a low command of about one foot, but the parados was ample and irregular.

The firing step was normal, above the firing step were holes for storing bombs and ammunition, while below the firing step were the dugouts.

The dugouts consisted mostly of long holes of varying lengths about 4 feet high entered by slits some 2 feet broad



399 **Notes on Turkish Trenches at Sannayalt.**

between the firing step and the bottom of the trench.

The roofs of these dugouts were shored up by planks and timber.

It must have been difficult for a man to get into and out of these dugouts even when not wearing his equipments, but they were proof against our heaviest artillery. A rough sketch shows the arrangement of a bay but few of these were exactly similar.

In many places protection was afforded for some of the garrison by scoops in the side of the Traverse.

The traverses were all very deep and broad for it must be remembered that Turk had to contend against enfilade fire from the other bank of the river which was in our hands.

A listening gallery had been dug some 25 yards east of and parallel to the front line. It ran practically continuously from the river to F. 2. This gallery consisted of a tunnel some 3 feet 6 inches square, of which the roof was 2 feet below ground level. Planks and corrugated iron shored up with timber of all descriptions kept its roof from falling in.

The gallery crossed the many 'saps shown on the map and relied on them and on holes in its roof for air. In it there were no signs of mines or electric wires nor was any trace found of a wire for obtaining induction from our telephones.

It seemed to be purely a defensive gallery against our mining although it is quite possible that snipers and lookouts used the holes in its roof.

The soil had been used either to fill up superfluous trenches and holes of which there were many behind the front line, or had been thrown on the parapets thereof.

There were many saps forward from the front line mostly under 50 yards long. Some were used by bombers and snipers but in none were machine gun emplacements seen.

The whisker like marks shown on the map attached in rear of the front Trench represent places for domestic arrangements and a few dugouts probably for platoon commanders etc.

From the front line along the edge of the river and parallel



to it a high bank had been constructed by the Turks to keep the river from overflowing during the flood season. This bank was also of great assistance to the enemy in protecting him from our machine gun fire from the southern bank of the river particularly during his counter attacks.

No flammenwerfer gas cylinders were seen in the trenches although a length of hosepipe was found in the front line near the river which was used for drawing water. This piping was probably responsible for the various statements of flammenwerfer pipes and gas nozzles which had from time to time been current.

The second line where it existed was used as an inspection or communication trench. It did not appear  
**2nd Line.** to have been lived in. It was not provided with dugouts, nor was there any wire entanglement in front of it.

Four circular trenches near F. were interesting. They first figured in our aeroplane photographs about August 1916 when the Turkish big minniewerfer started operations. These circles were found to be merely shallow fire trenches unless they were designed as dummy minniewerfer emplacements to draw fire. No reason can be given for them ; if that was their motive they were most successful.

As our troops had not consolidated this line it was found more in its original state than the first two  
**Third Line.** trenches. From the river to F 18 there was a low wire entanglement some 15 yards in front of the parapet. This wire was 10 yards broad on poles roughly 1 foot high and would have made a nasty obstacle if it had not been destroyed by our gunfire.

It was countersunk and protected by a parapet 1 foot high. Beside protecting the wire, this parapet gave the impression that it was the enemy's "third line" and caused a good deal of our shooting to fall short.

From F. 18 Northwards the trench for wire entanglement had been prepared but no wire had been placed in it.

The class of barbed wire used by the Turks in this en-



tanglement varied considerably, but it was mostly a very light, poorly barbed wire, not nearly as formidable an obstacle as our barbed wire affords.

The third line itself consisted of a fire trench and in some places a support and also an inspection trench. Where the fire trench was single (*vide* sketch) it was some 6 feet deep, provided with a firestep, irregular traverses and a few dugouts with overhead cover. From F. 19 to F. 18 there was a triple line of trenches with dugouts in the central one.

The sides of the trenches were generally speaking not revetted and none of the dugouts were more than splinter proof.

With the exception of those in the front line there appeared to be no dugouts in the trenches which had been provided with overhead cover sufficiently strong to resist anything heavier than an 18 pound shell.

In the front line only was revetting material used. The remaining lines had been starved even of sandbags.

No Machine Gun Emplacements provided with overhead cover were recognisable in the first two lines and the only emplacements seen were sited for oblique fire, without overhead protection.

In these great care was taken not to disarrange the trace of a trench and so give away the position of the emplacement to aeroplane photographs.

There appeared to be no special protection for either the machine gun or the crew during a bombardment.

No emplacement was found in the parados or between the first two lines and it was noticed that traffic control posts like F. 14 F. 11 b emplacements were not provided even though such positions would fire down a straight length of trench.

The writer was disappointed to find no trace of interdependent emplacements from which no man's land could be locked. It seemed that the Turks trusted more to changing the position of their guns frequently than to building shell proof emplacements for them.



One big minniwerfer (throwing 150 bombs) was inspected.  
**Big Minnie.** The pit was roughly 10 feet deep by 10 feet by 9 feet. It was partially covered with light overhead cover as protection from aerial observation. It relied on the depth of the pit to hide the flame on discharge. The walls were partially revetted and the dugouts in the vicinity were safer than usual.

The main system of communication trenches shown on the  
**Communications.** sketch were deep narrow trenches in some places 12 feet deep. Their irregularity must have largely contributed to their safety. There were very few trenches along which stretchers could have been taken. There was no deliberate straightening of the last length of a trench so as to check a bombing attack.

The only telephone wire ran down the Ataba lane and stopped at the fourth line. It consisted of a bare wire suspended on the top of wooden posts, which were fixed to the side of the trench and projected some 2 feet above ground level. Crossing places were arranged. Every station on the circuit was apparently tapped in to this wire.

The river was too high in February to make it possible to  
**Water.** see how the Turks used to draw their water during the summer but it appeared that they dug deep reservoirs just North of their river bank and filled them by hand pumps, the piping of which was carefully concealed.

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## **BIOGRAPHICAL SKETCHES.**

BY

COLONEL R. G. BURTON, INDIAN ARMY.

### **I. Clive.**

Those who have visited the India Office in Whitehall no doubt observed the statue of an officer in the uniform of the 18th century, standing on a pedestal near the entrance to that historic building. The hand of the figure grasps a sword, and the stern and forbidding features of the great warrior look down upon the passers by of a generation that owes an Empire to his deeds. It is the statue of Robert Clive. He planned campaigns; he fought battles; he ruled provinces; his wisdom in council equalled his skill and valour in the field; he founded an Empire.

In the year '1748 an able soldier, Major Stringer Lawrence, arrived from England with reinforcements amounting to some 1400 men, and took over command of the Company's army at Fort St. David. Lawrence at once set about organisation of his small force, and raised native troops, the beginnings of our Indian Army. In this he was aided by Robert Clive. War had broken out in 1744 and things had gone badly for the English. The French captured Madras in 1746; on this occasion Robert Clive, who had arrived in India two years earlier as a writer or clerk in the Company's service, escaped in the disguise of a native. Finding office life irksome, the young writer in 1747 exchanged the pen for the sword, and was given a commission as ensign in the Company's Army. Next year he distinguished himself in repulsing a French sortie at the siege of Pondicherry.

Madras was restored to the English by the treaty of Aix-la-Chapelle in 1748, but any hopes that the cessation of hostilities in Europe would be followed by peace in India were soon extinguished. The French Governor of Pondicherry, Dupleix, was a man of vast ambition and inexhaustible energy. He aimed at no less than the establishment of French dominion



throughout Southern India, and the English viewed with alarm the aggrandisement of the rival power under his able leadership.

With a view to counteracting this influence, the English Government initiated a policy of intervention in the affairs of native states. In pursuance of this policy a claimant to Tanjore, who had been deposed, was supported by an English force, which attacked the fort of Devicottah in 1749. Clive led the storming party, but his force was cut to pieces by the enemy's cavalry and he barely escaped with his life. A renewed attack was then made and the place taken.

Meanwhile the viceroyalty of the Deccan, held under the authority of the Delhi Emperor, had become vacant by the death of Nizam-ul-Mulk. As usual in oriental countries, rival claimants appeared, the one supported by Dupleix and the other by the English. But the latter long remained inactive, while the French were consolidating their influence in the Deccan. It was thought by the natives in olden days that the East India Company was an old woman, and certainly the conduct of the Madras Government at this period gave colour to the supposition.

At length in 1751, when French power was supreme in the Deccan, the Madras Government moved, and a force under Major Ginger (?), whose character belied his name, moved out from Fort St. David on the Arcot-Trichinopoly road to intercept the rival army which was marching on the latter place, then held by the English. Clive accompanied this force as Commissariat officer. On the first discharge of artillery the troops were seized with a panic and Clive himself was unable to rally them. They retreated to Trichinopoly, where nearly all the Company's forces in India were then cooped up.

Clive, now a captain, had returned to Fort St. David, and was employed in taking reinforcements to Trichinopoly, which was invested by the enemy. However, the reinforcements were passed through their lines, and Clive returned to Madras. It was at this juncture that his genius asserted itself. As the young Napoleon showed the French generals how to take Toulon, so Clive, a young man of 26, pointed out that the way to relieve



Trichinopoly was to attack Arcot. The Governor of Madras fortunately perceived the merit of the plan. A force of two hundred Europeans and three hundred sepoys with three field guns was equipped from the garrisons of Madras and Fort St. David, and with this miniature army Clive marched from Madras on the 6th September 1751.

Arcot, the capital of the Carnatic and seat of government of Chanda Sahib, the protégé of the French, who was investing Trichinopoly, was an open town sixty four miles south-west of Madras, having about a hundred thousand inhabitants and no defences but a ruined fort, held by a thousand natives. Clive pushed forward, occupied the fort which was deserted by the enemy, repaired the defences and mounted the guns which he found there; he also made several sorties against the enemy who were encamped at a distance of some six miles.

Chanda Sahib, hearing of this enterprise, detached four thousand men from the Trichinopoly blockading force to recapture the fort; to these a hundred French were added by Dupleix, and the army was raised to ten thousand by other levies. This force entered Arcot on the 10th October, and laid siege to the fort. The defenders, after an unsuccessful sortie, now numbered only a hundred and twenty Europeans and two hundred sepoys. A fortnight later the enemy's battering train arrived, and on the 10th November Clive was summoned to surrender. He replied with a message of defiance.

Meanwhile reinforcements had been collected, and the Mah-rattas under Morari Rao had taken the side of the English. But help was still far off. On the 25th November, the Muhammadan festival of Muharram, when the fanaticism of the followers of the prophet is always inflamed, the enemy attacked. Clive had trained his guns on the breach and provided relays of muskets to keep up a continuous fire. At dawn the enemy swarmed up the breach, while armoured elephants were brought forward to batter down the gates. But so deadly was the English fire that the assailants were kept off, and the elephants, panic-stricken, turned back and trampled many under foot. Next day the



enemy raised the siege, leaving Clive triumphant, though with the loss of a quarter of his garrison. But the triumph was not dearly bought, for by it English prestige, then at a very low ebb, was re-established in southern India. Reinforcements reached Clive on the evening of the assault, and he was enabled to take the field with two hundred Europeans and seven hundred sepoy, after leaving a garrison in Arcot fort. Clive well knew that in India there is little difference between a retreating army and a beaten army. The enemy was demoralised. Taking up the pursuit, Clive picked up six hundred Mahratta Horse, made a forced march, caught up and defeated the enemy as they were about to cross the Arni river, and then marched on Conjeveram, which he captured after a three days' siege. He then returned to Fort St. David to organise measures for the relief of Trichinopoly, which was still besieged.

Clive's deeds roused even the Madras Government to action. They prosecuted the war with vigour. At the same time the schemes of Dupleix became more ambitious and far-reaching. He excited the derision of his compatriots by his arrogance, his love of display, and his assumption of the dress and style of an oriental potentate. While the decision of the war lay about the investment of Trichinopoly, Dupleix directed a diversion to prevent the relief of that place.

No sooner was Clive's back turned than the enemy forces reassembled, restored the defences of Conjeveram, threw a garrison into the fort to cut off communication between Madras and Arcot and ravaged the country close up to Madras. This diversion caused a suspension of measures for the relief of Trichinopoly, and on the 13th February 1752 Clive marched against the enemy with 380 Europeans, 1300 sepoy and 6 guns.

The enemy, though superior in force, retired on Conjeveram, with Clive in pursuit. The garrison of the fort surrendered, but the main hostile force had marched on Arcot. Clive followed, and next day marched straight into an ambush at Covrepauk, sixteen miles on the way to Arcot, where he was surprised by the French guns, posted in a mango grove, opening on



the right flank of his advanced guard. The enemy, greatly superior in strength, were drawn up ready for battle, their cavalry between the road and a dry watercourse on the left of the road, in which the main body of their infantry was posted.

Clive, with the eye and decision of a great commander, made immediate dispositions. He brought up his guns to reply to the French artillery; put most of his infantry under cover in the watercourse facing the French main body, sent his baggage back half a mile under guard, and posted two guns with a small escort of infantry to protect his left flank against the enemy's horse. The rapidity with which he grasped the situation and made the requisite dispositions marked him out at once as that rare being, a heaven-born general, unsurpassed in steadfastness and resource.

The battle continued at night by the light of the moon. French and English infantry faced each other in the watercourse, firing at close range the hostile cavalry rode backwards and forwards, threatening the guns and infantry but fearing to charge the white men. The guns meanwhile kept up a duel in which the superior metal of the French artillery was getting the upper hand. Clive saw that the only way to victory was to silence the French guns, posted in front of the mango-grove, which was covered by a ditch in front and flank but might be open in rear.

A native sergeant sent to reconnoitre reported that the rear of the battery was unguarded. Clive at once withdrew two hundred English from the watercourse, and started to attack the battery. But no sooner was his inspiring presence withdrawn than the native troops in the watercourse began to waver. He returned to rally them, and sent Lieutenant Keene to command the attack on the battery.

That officer made a detour and arrived within three hundred yards of the mango grove, where he halted his men and sent Lieutenant Symonds to reconnoitre. Symonds came upon a party of hostile infantry in a deep trench, but, answering their challenge in French, he was allowed to pass and enter the grove in rear of the guns; he observed the battery and its escort facing the English guns, and, avoiding the trench, stole back to his



men. He then guided the detachment to the grove and suddenly opened fire on the men in the trench, whereupon the whole enemy force, including the gunners, fled in confusion, and took refuge in a building where, packed so tightly that they could not use their arms, they soon surrendered. The hostile infantry and horse, receiving news of this disaster, immediately took to flight, leaving Clive victor on the field of battle.

I have described this battle in detail because, although the initial surprise of Clive's force was due to defective arrangements for protection on the march, in itself a valuable lesson, it is a model of skill, coolness, courage and resource, perfect in its tactical conduct.

Clive again distinguished himself at Seringam, near Trichinopoly, where, though twice wounded, his extraordinary courage, self-possession and resource secured his own safety and the surrender of the enemy. I will not follow the great soldier's career further in Southern India. He distinguished himself on every opportunity, and stood forth before all, an acknowledged soldier of genius and leader of men. The terror of his name, like that of Napoleon 50 years later, was alone sufficient to appal his enemies; one historian tells us that "under the magic of his leadership a handful of men, starting as raw and villainous recruits, returned as heroes! His departure for England for reasons of health at the close of the year 1752 was worth a victory to Dupleix. But he had well begun the work, which ended in the final defeat of the French at Wandewash eight years later. And he was only twenty-seven!

When Clive returned to India, he was on the threshold of still greater events than those in which he had borne so conspicuous a part. He was now a Lieutenant Colonel and Governor of Fort St. David. Peace had been concluded with the French party in 1755, although it proved but a truce. In the mean time the English at Calcutta had become involved in trouble with Siraj-ud-Daula, Nawab of Bengal, who marched against the Presidency town in June 1756, captured a number of prisoners, and confined them in the famous Black Hole of Calcutta, where



only 23 survived out of 146.

On receipt of this news at Madras, Clive set sail with nine hundred European troops and 1500 sepoys in a squadron commanded by Admiral Watson. In December the fleet sailed up the river Hooghly, and on the 29th anchored below the fort of Budge Budge, where troops were landed. Here Clive was nearly meeting with disaster, being surprised by a night attack of the enemy from the fort, but with his usual courage and resource he rallied his disorganised troops and drove off the attacking force.

A ludicrous incident happened the following night. The guns of the fort had been silenced by the fire of the ships, but the garrison continued to discharge arrows and muskets. It was determined to storm the place at the approach of day. The tranquillity of the night was suddenly disturbed by loud acclamations, and news was brought that the fort was taken. It transpired that a common sailor named Strahan, animated by grog, strolled away towards the fort, scaled the breach, and found several of the garrison sitting on the platform. He gave three cheers and shouted "the fort is mine"! The defenders at once attacked him and he defended himself until his cutlass broke in his hand; at that very instant he was joined by two or three more straggling comrades who had heard his triumphant shouts. The noise reached the army and without order or any attention to discipline the men rushed in pellmell; and thus a fort with eighteen guns, from 24-pounders downwards, and forty barrels of gunpowder were captured.

It was necessary that some displeasure should be shown regarding this breach of all order. The victorious Strahan was brought before the Admiral as a culprit. The Admiral asked how he dared to commit such a breach of discipline. The hero stood scratching his head and twirling his hat, and at length confessed—"to be sure I took the fort, but I hope there was no harm in it." The Admiral with difficulty kept his countenance, but at last with much seeming anger ordered him away. As Strahan was going out of the cabin very sulky, he muttered swearing a great oath, "If I am flogged for this, I will never take another



fort by myself as long as I live". As may be imagined he was readily pardoned, but he was so drunken a beast that the Admiral found it impossible to take him out of the line of life in which he was.

Meanwhile hostilities began again with the French, and a combined expedition by land and water resulted in the capture of the settlement of Chandernagore, with five hundred European prisoners and all its guns and military stores. Since his arrival in Bengal, Clive had been negotiating with Siraj-ud-Daula who in June moved out at the head of an Army of 50000 men, supported by a small body of French. Clive had marched from Chandernagore to meet him, having only some 3000 men, of whom 750 were English. During the period of negotiation some transactions took place that were discreditable alike to Clive and the cause he represented. These included the suborning of Mir Jafar, the principal military commander of the Nawab, perhaps a legitimate transaction. But it is impossible to condone Clive's double dealing and even forgery. One is tempted here to quote at length the passages in which Macaulay upholds the necessity for straight dealing in political as in other matters. In his essay on the life of this great man he says:—"We doubt whether it be possible to mention a state which on the whole has been a gainer by a breach of public faith. The entire history of British India is an illustration of the great truth that it is not prudent to oppose perfidy to perfidy, and that the most efficient weapon with which men can encounter falsehood is truth. During a long course of years, the English Rulers of India, surrounded by allies and enemies whom no engagement could bind, have generally acted with sincerity and uprightness; and the event has proved that sincerity and uprightness are wisdom. English valour and English wisdom have done less to extend and preserve our Oriental empire than English veracity. All that we could have gained by imitating the doublings, the evasions, the fiction, the perjuries which have been employed against us, is as nothing when compared with what we have gained by being the one power in India on whose word reliance can be placed. Every



sepoys know that the promise of the Company will be kept: he knows that if he lives a hundred years his rice and salt are as secure as the salary of the Governor-General: he knows that there is not another state in India which would not, in spite of the most solemn vows, leave him to die of hunger in a ditch as soon as he had ceased to be useful. The greatest advantage which a government can possess is to be the one trustworthy government in the midst of governments which nobody can trust."

Arthur Wellesley (Duke of Wellington) expressed the same principle when he wrote:—"I would sacrifice Gwalior or every frontier of India ten times over in order to preserve our credit for scrupulous good faith, and the advantage and honour we gained by the late war and peace; we must not fritter them away in argument drawn from overstrained principles of the laws of nations which are not understood in this country. What brought me through many difficulties in the late war and the negotiations of peace? The British good faith and nothing else."

Meanwhile Clive advanced to Kasimbazar, while Siraj-ud-Daula moved to Plassey on the Baghirathi river. In face of the Nawab's immense army, Clive on the 21st June 1757 called a council of war to consider whether the English army should cross the river and attack the enemy, or await assistance from the Mahrattas, with whom an alliance had been concluded. The council as usual in such cases decided to wait upon events, Clive siding with the majority. But after reflection he changed his opinion and issued orders for the passage of the river. He himself said that this was the only occasion on which he called a council of war, and had he followed its advice, Bengal would have been lost.

The following is Clive's own account of the battle of Plassey, which took place on the 23rd June:—"At daybreak we discovered the Nawab's army at the distance of about three miles, in full march towards us, upon which the whole were ordered under arms, being in two battalions. The Europeans were told off in four grand divisions, the artillery distributed between them, and



the sepoys on the right and left of the whole. Our situation was very advantageous, being in a grove surrounded with high mud banks; our right and front were entirely covered by the above mud banks, our left by Plassey house and the river, our rear by the grove and a large village. The enemy approached apace, covered a fine extensive plain in front of us as far as the eye could discern from right to left, and consisted of 15000 horse and 35000 foot, with more than forty pieces of cannon. They began to cannonade from their heavy artillery, which could do little execution, our men being lodged under the banks. We could not hope to succeed in an attempt on their cannon, being almost planted round, and at a considerable distance both from us and each other. We therefore remained quiet in Post, in hopes of a successful attack on their camp at night. At three hundred yards from the bank under which we were posted was a pool of water with high banks all round it; this the enemy presently took possession of, and would have galled us much from thence, but for our advantageous situation, with some cannon managed by 50 Frenchmen.

As their army was drawn up at too great a distance for our short sixes to reach them, one field piece with a howitzer was advanced 200 yards in front, and we could see they played with great success amongst those that were of the first rank, by which the whole army was dispirited and thrown into confusion. The enemy's fire now (at noon) began to slacken, and soon after entirely ceased. In this situation we remained till two o'clock when, perceiving that most of the enemy were returned to their camp, it was thought a proper opportunity to seize one of the eminences from which the enemy had much annoyed us in the morning. Accordingly the grenadiers of the first battalion, with two field pieces and a body of sepoys supported by two platoons and two field pieces from the 2nd Battalion, were ordered to take possession of it, which accordingly they did.

This encouraged us to take possession of another advanced post within 300 yards of the entrance to the enemy's camp. All these motions brought the enemy out a second time, but in attempting to bring out their cannon they were so galled by our



artillery that they could not effect it. Their horse and foot, however, advanced much nearer than in the morning, and made as if they intended to charge ; two or three bodies being within 150 yards. In this situation they stood, a considerable time, a very brisk and severe cannonade which killed upwards of 400 men, among whom were four or five principal officers. Their loss put the enemy into great confusion and encouraged us to attack the entrance to their camp, and an adjacent eminence at the same time. This we effected with little or no loss, although the former was defended by the 50 French, and a very large body of black infantry ; and the latter by a large body of horse and foot. During the heat of the action the remainder of the forces were two or three times ordered to join us, and that order as often countermanded on account of the movement of a large body of horse towards the grove, whom we had often fired upon to keep at a proper distance. Those afterwards proved to be our friends commanded by Meer Jafar. The entrance to the camp being gained, a general rout ensued, and the whole army continued the pursuit for upwards of six miles, which for want of horse answered no other purpose than that of taking all their artillery, consisting of 40 pieces of cannon, and all their baggage."

After the battle of Plassey Mir Jafar was installed as Nawab of Bengal which became in fact an English province. Clive was appointed Governor and in that capacity consolidated the power of the Company in the Presidency, and organised military expeditions to the country north of the Carnatic and to Oudh. He also came into collision with Shah Alam, son of the Mugal, who invested Patna, but raised the siege and, appalled by the mere terror of Clive's name, fled at the approach of the latter at the head of a small army, and the great host he had gathered completely dispersed.

Clive also defeated the Dutch, who had undertaken a naval and military attack on the Hooghly. Soon after this achievement he left for England in February 1760, and on his departure it was said that it seemed as if the soul were depart-







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ing out of the body of Bengal. In England he was received with honour, raised to the peerage, and referred to by Pitt as "a heaven-born general, a man who, bred to the labour of the desk, had displayed a military genius which might excite the admiration of the King of Prussia."

With the departure of Clive a period of misgovernment ensued in Bengal, at length reaching such a pitch that the Directors of the East India Company concluded that Clive was the only man capable of restoring British prestige and influence to its former position. He was accordingly appointed Governor and Commander-in-Chief and reached Calcutta in May 1765. He at once set about reforms, stopped the bribery, corruption, and worse that were rife in the civil service, and suppressed with the sternest measures a mutiny among the officers of the Company's army.

Clive's successes were due to his boldness and resolution, and his knowledge that an Asiatic horde, however numerous, could always be defeated by a bold attack of disciplined troops. The same knowledge induced Cornwallis to say in 1787 that "a Brigade of our sepoy's could make anyone Emperor of Hindustan." But his success must be ascribed in the first instance to his valour and the devotion and confidence with which he inspired his men. If, like him, you are strong, if you are just, if you are considerate, native troops will do anything for you. As Sir John Malcolm said, Clive was one of those extraordinary men who give a character to the period and country in which they live. He was trained in the best of schools, a state of danger, of suffering, and activity. It was by the boldness and novelty of his measures, the impetuosity of his onset, and the imperturbable obstinacy of his defence, that he confounded his enemies and changed the hesitating troops under his command into a band of heroes. He left nothing to chance: he foresaw and provided for everything. Victory attended him wherever he turned, and no enterprise was too arduous where he was the leader.



## ***Biographical Sketches.***

### **II. Arthur Wellesley.**

To the student of the English conquest of India the career of the illustrious soldier whose military genius, first revealed in the East, attained its zenith on the field of Waterloo, must ever be of transcendent interest. It is, moreover, not only as a soldier but as a great administrator that his genius illuminates the records of his life and the pages of his despatches. In those documents, remarkable alike for their literary quality and their perfect lucidity, can be traced the development of the great character of the man, his attention to all details that contributed to success and his clearness of insight into the matters he was engaged upon, whether the administration of affairs, arrangements for the well-being of his troops, or dispositions for attacking the enemy to whom he was opposed.

Colonel Arthur Wellesley, as he then was, arrived in India with his regiment, the 33rd Foot, early in 1797. A year later his brother Lord Mornington, better known as the Marquis Wellesley, reached India as Governor-General, and at once inaugurated that policy which was to be productive of so much glory to the British arms, and of such great influence on the destinies of the British Empire. He determined in the first place to eradicate all vestiges of French influence.

The French had been decisively beaten at the battle of Wandewash in 1760. But many adventurers of that enterprising nation still held office in native states. At Hyderabad in the Deccan Raymond had raised a force of 14000 men who bore the colours of the French Republic and had the Cap of Liberty engraved upon their buttons. In Mysore were French officers in the service of Tipu Sultan, the implacable enemy of the English, who was in correspondence with Napoleon Bonaparte in Egypt, and who at this time received a French mission from the island of Mauritius. This absurd mission, inspired by the revolutionary fanaticism of the time, founded a Jacobin club at Seringapatam, planted a Tree of Liberty surmounted by a Cap of Equality, and on public parade hailed as "Citizen Tipu" the most bigoted and bloodthirsty despot who ever sat upon a throne. Needless to



say, Tipu was ignorant of the real significance of these proceedings, and thought the enthusiastic republicans were a mystic association.

Frenchmen were also in the service of the Mahratta Chiefs.

The Marquis Wellesley saw that war with Mysore was inevitable, and feared that the French party at Hyderabad might attempt to seize the Nizam's Dominions and secure them to the domination of France. The Governor-General's first measure was, therefore, the disarmament of the French Corps at Hyderabad, while a treaty against Tipu was at the same time concluded with the Nizam.

A combined Army, joined by some of the Peshwa's Horse marched on Seringapatam in February 1799. There is not space here to follow the details of this campaign, in which Colonel Wellesley commanded a Division mainly composed of native troops, but including his own regiment, the 33rd Foot. A successful action was fought at Malavelly, and the invaders arrived before Seringapatam early in April, while at the same time a Bombay army reached the scene.

An incident which occurred during the siege is, however, worth recording. Wellesley made a night attack on an enemy post; the attack failed; Wellesley became separated from his troops, was struck on the knee by a spent ball, and only regained camp after some hours' wandering in the darkness. Twelve grenadiers of the 33rd were captured and cruelly put to death by having nails driven into their heads. Wellesley himself said that the ground had not been reconnoitred, and he "resolved after this never to attack by night a position that had not been reconnoitred by day." This principle is embodied in our Field Service Regulations (Section 130); its neglect has led to disaster in our own time. Night marches and night attacks exhaust the energies of troops, and great issues are fought out by daylight. As General Harris, who commanded at the siege of Seringapatam, wrote in his diary on this occasion, "no wonder night attacks so often fail."

Seringapatam was taken by assault and Tipu killed on the



4th May 1799, but Wellesley bore no active part in the storming of the place, as his division was in reserve. He was made Governor of the city after its capture, and afterwards commanded the troops in Mysore for some years. In that capacity he had a great deal of administrative work to do, and some military operations to carry out in the suppression of refractory chiefs and predatory hordes. The most important and successful of these operations was the destruction of a bandit named Dhundia Wagh, who, being released from prison on the capture of Seringapatam, assumed the high-sounding title of King of the 'Two Worlds, and gathered a large following, including cavalry and guns, with which he ravaged the country. The King of the Two Worlds was hunted down, and his band dispersed in a skilfully conducted campaign ending in a brilliant action. Wellesley, a Major-General at 34, now stood on the threshold of great events which were to impress his name for ever on the history of our Empire. It has already been related that the Mahratta Chiefs had French adventurers in their service. The most noteworthy of these was Perron, in the service of Sindhia, the Chief of Gwalior. This Chief maintained the largest regular army of all the native powers. His army had originally been organised and trained by de Boigne, a great Frenchman whose name stands out prominently among the military adventurers of Hindustan. Sindhia and Perron had the Mogal Emperor at Delhi completely in their power.

The Mahrattas, originally a mere predatory horde, had become an organised nation under the rule of Sivaji. After his death the government passed from the feeble hands of his successors, the Rajas of Satara, into those of the astute Brahmin ministers, the hereditary Peshwas, who had their seat at Poona. Other princes, descendants of officers of Sivaji, combined to form the Mahratta Confederacy, which acknowledged the Peshwa as their head, but waged frequent internecine war. They were, however, generally ready to combine against a common enemy. The chiefs of the Mahratta Confederacy were the Peshwa at Poona; Holkar at Indore; The Gaikwar of Baroda; Sindhia, who had his capital at Gwalior; and the Raja of Berar, who was Chief of Nagpore. In



1802 dissensions were rife in the Mahratta states. Holkar defeated the combined forces of the Peshwa and Sindhia under the walls of Poona, and the Peshwa Baji Rao fled to Bassein. Sindhia withdrew to the North, and in conjunction with the Raja of Berar threatened the territories of our ally the Nizam, whom we were bound to support both by treaty and by interest. The English Government now intervened, concluded a treaty at Bassein, and assembled an army of observation at Harihar, on the Mysore-Hyderabad frontier. From this army General Wellesley was detached in March 1803 to reinstate the Peshwa at Poona. Pushing ahead with his cavalry and the Peshwa's Mahratta Horse, Wellesley, after a rapid march of sixty miles in 24 hours, entered the city in time to save it from destruction by Holkar, who withdrew to his own territory, and took no part in the impending campaign.

It was, then, with Sindhia and the Raja of Berar that the English had to contend, and for this purpose an army was assembled in Hindustan under General Lake, who beat Sindhia's army of the north, entered Delhi, and released the Mogal Emperor from Mahratta domination while Wellesley was fighting in the Deccan.

The Mahratta Chiefs naturally dreaded the extension of English dominion. They viewed with dismay and opposed with force the establishment of effective power in the land where they had been so long accustomed to carry on with impunity their lawless mode of life.

Wellesley, with 9000 men and a co-operating army of 8000 under Colonel Stevenson, was to operate in the Deccan and protect the dominions of the Nizam against the incursions of the enemy.

The capture of Poona was followed by protracted negotiations with the Mahratta Chiefs, which, however, led to nothing. Wellesley was given full powers, and his despatches prove how much patience and diplomacy he exercised in these negotiations. Stevenson was at this time at Aurungabad in the Nizam's Dominions, watching Sindhia and the Raja of Berar, who, taking the field in person, had assembled their armies at Barhanpur on



the Tapti river, with the intention of invading Hyderabad.

The northern frontier of the Nizam's dominions and the southern border of Berar were marked by a rugged and forest-clad range of hills, traversed by three passes at Rajura, Ajanta, and Kesari. Stevenson's object was to try and prevent the enemy from crossing any of these passes.

Wellesley opened the campaign by the capture of Sindhia's fortress of Ahmednagar, one of the strongest in India, the possession of which ensured the safety of the English communications with Bombay. This place was attacked and taken by assault on the 11th August 1803, with a loss of only a hundred and sixty killed and wounded. The fortress was strongly defended by a garrison of 5000 men and sixty guns, but nothing could withstand the ardour of the English troops. A Mahratta Chief wrote regarding this operation :—"These English are a strange people and their General is a wonderful man; they came here in the morning, looked at the wall, walked over it, killed all the garrison, and returned to breakfast. What can withstand them!''.

Before proceeding further with this narrative, it is advisable to give some account of the country which was to form the theatre of operations in the coming campaign. The conflict lay within that part of India known as the Deccan, situated between the Krishna and Tapti rivers. The country generally was flat, although it contains some ranges of hills smaller than the Ajanta Ghauts, already referred to. The Godavery is in August a swift and wide river, swollen by heavy rain, while its tributaries are frequently impassable for many hours owing to the same cause.

The armies of Sindhia and the Raja of Berar, consisting of about 30000 Horse, 10000 infantry and many guns, were in Berar, just north of the passes through the range of hills, threatening to invade the Nizam's dominions. Early in August, Wellesley sent Stevenson to guard these passes with 8000 men; he himself with about the same number moved forward from Ahmednagar and crossed the Godavery at Toka on the 23rd August 1803. Meanwhile Stevenson had been unable to defend all the passes against



the vast hordes of Mahratta Horse which crossed the Ajanta pass on the 24th August, and poured over the plain. Their infantry and guns followed.

Wellesley, who had gone to Aurangabad, turned south and moved over the Godavery to prevent the enemy from crossing that river, for they had expressed their intention of marching on Hyderabad. He then turned northwards, checking the enemy's movement and forcing him towards the Ajanta hills. Stevenson, moving farther to the north, stormed the fort of Jalna on the 2nd September, and eventually moved northwards towards the Ajanta pass, parallel to Wellesley's line of march. The enemy was reported to be at Bokardhan, some thirty miles north of Jalna. A low range of hills ran from Jalna northwards, and the two forces Wellesley's and Stevenson's moved on either side of it. It had been arranged between the two commanders to attack on the 24th September. But the information as to the position of the enemy was not understood, the intelligence relating to the district and not to the town of Bokardhan, and on the 23rd September Wellesley, arriving on a ridge beyond Nalni, found himself in the presence of the enemy who, with 30,000 horse, 10,000 infantry, and 250 guns, had taken up a position on a tongue of land between the Kailna and Juah rivers. To oppose this great army, Wellesley had only some 6000 men, including four regiments of cavalry, and seventeen guns. He had two alternatives to attack at once, or to retreat and await Stevenson's arrival. He well knew the danger of retreat in the face of such an immense force of cavalry, which would harass his line of march. Moreover, he did not wish to give the enemy a chance either of attacking him or retreating, so he elected the bold course, although Stevenson was eight miles off.

Between him and the enemy flowed the Kailna river, swollen to a flood in this rainy season, and apparently impassable. But the English general saw that two villages stood one on either bank, and rightly concluded that there was sure to be a ford between them. It was the only point of passage and the enemy had neglected to occupy it.



The Mahratta left and centre were composed of Infantry, drawn up in several lines, in front of and in the intervals of which stood their guns ready to open fire. A dense mass of horse was arrayed upon the right, stretching as far as the eye could reach. Wellesley at once perceived that he could turn the Mahratta left, forcing them to change front and confine their line of battle to a narrow space where their numbers would give them little advantage. He accordingly crossed the river, his cavalry keeping in check large masses of the enemy's horse on the hither side. The Mahrattas at once presented a new front, their left resting on the village of Assaye their right on the Kailna river. This new front was one huge battery, supported by infantry, the heavy guns being especially thick about the village. At the beginning of the action the English artillery was almost overwhelmed. The General intended first to attack and drive in the enemy's right, before advancing on Assaye, but the officer leading the advance took his men straight in against the Mahratta left, and the other troops followed. There were thus severe losses before the army had time to deploy, and the leading infantry battalions were saved from destruction only by a timely charge of the 19th Light Dragoons. It is related that when the line was ready to advance the general gave the command, and "this order was received with cheers and instantly obeyed. It was soon perceived, however, that the leading battalion had diverged from the line of direction, which made it necessary to halt the whole front line. This was a critical moment. The troops had got to the summit of a swell of the ground which had previously sheltered their advance; and the enemy redoubled their efforts, firing chain shot and every missile they could bring to bear on the line. General Wellesley, dread- ing the influence of this momentary halt on the ardour of the troops, rode up in front of a native battalion, and taking off his hat, cheered them in their own language and gave the word to advance again."

It was not until the English centre and left came into



action and defeated the enemy's right that the Mahrattas\* were driven from Assaye, and rolled back across the Juah stream which now ran red with blood. A cavalry charge headed by the 19th Light Dragoons, whose brave leader, Colonel Maxwell, fell in the hour of victory, completed the discomfiture of the enemy, who fled without halting for twelve miles from the field of battle, leaving 1200 dead and many wounded. The losses on the English side amounted to some 1600 officers and men. The victors were in no condition to pursue, and when Colonel Stevenson came up next day, the enemy had already crossed the Ajanta Pass into Berar. Wellesley moved to Ajanta on the 30th September, and soon found himself engaged in defending the passes against a fresh threatened invasion. After the battle of Assaye, the Mahrattas reassembled on the Tapti river, and after marching in a westerly direction, moved south, threatening to reenter Hyderabad territory by the Kesari Pass. Wellesley remained south of the passes, while Stevenson marched to Barhanpur, which he took without opposition on the 16th October.

On the 24th October, while at Ferdapur, Wellesley heard that the Raja of Berar had moved southwards, reentered the Nizam's territory by the Kesari Pass, and was marching towards the Godavery. The General at once ascended the Ajanta Pass, and, marching 120 miles in eight days, saved all his convoys and drove the enemy back into Berar. On the 25th he was back at Ajanta and next day wrote from Pahlud:—"Since the battle of Assaye I have been like a man who fights with one hand and defends himself with the other. With Colonel Stevenson's corps I have acted offensively and have taken Asirgarh; and with my own I have covered his operations, and defended the territories of the Nizam and the Peshwa. In doing this I have made some terrible marches, but I have been remarkably fortunate; first, in stopping the enemy when they intended to pass to the southward through the Kesari Ghaut; and afterwards

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\*They were not Mahrattas, but Sindhia's regular infantry, composed of Jats, Rajputs and other warlike races.



by a rapid march to the northward in stopping Sindhia when he was moving to interrupt Stevenson's operations against Asirgarh, in which he would otherwise undoubtedly have succeeded, and I think that in a day or two I shall turn the Raja of Berar who had passed through to the southward. At all events I am in time to prevent him from doing any mischief. I think we are in great style to be able to act at all on the offensive in this quarter, but it is only done by the celerity of our movements, and by acting on the offensive or defensive with either corps according to their situation and that of the enemy."

These operations were successful, and the Raja of Berar was driven back across the passes, but not until his cavalry had made more than one unsuccessful attack on convoys. The incidents of one of these attacks, described in Colonel Welsh's Military Reminiscences are worth relating, for they embody a valuable lesson. Two officers, Captain O'Donnell and Lieutenant Bryant were proceeding to join the army with drafts, when near the village of Kurjat Koregaon, about 70 miles from Ahmednagar, they were attacked by 1500 men, of whom a third were Arabs. "Captain O'Donnell, who, though small, was a truly gallant fellow, immediately assumed the command and led on his motley band, amounting to not more than one hundred men, to the charge. Lieutenant Bryant a very powerful man, first saved the life of O'Donnell, who had snapped his pistol at the leader of the Arabs, and was about to be cut down by him when Bryant put the Arab to death, and then attacking their colour-bearer, cut him down also, and seized their standard. At this moment the enemy's cavalry appeared, and O'Donnell drew off his little party into the village; but so closely were they pursued that they were forced to take post in a large choultry. Here the extraordinary courage and strength of Bryant, if it did not entirely save their lives, at least conduced to their preservation from famine. He haraunged the sepoys in broken English, not knowing a word of any native language, and continually sallied out with a few volunteers in search of food, and as regularly killed some of their opponents.



Amongst other feats, having broken his sword on some Arab's skull the first day, he seized a musket and bayonet which he always used afterwards; and so dexterous was he with this new weapon, that he frequently put the bayonet through one man, and knocked a second down with the butt-end. One day seeing a leader mounted on a beautiful mare, he singled him out for his prey, and running him through the body seized the mare and bore her off in triumph. Such a man at such a season, if he was mad, as some asserted, was worth a dozen of sober plodding fellows who, calculating difficulties, would have sat despairing at home, rather than run such imminent risks on every occasion. Of the hundred men collected in this spot all the native officers behaved ill, and would have persuaded the men to surrender had not many of them taken courage by the behaviour of Lieutenant Bryant, to them a perfect stranger, and by the conduct of the other two European officers."

It has been related that the Raja of Berar had recrossed the passes into Berar; he was there joined by Sindhia, and was followed by Wellesley who effected a junction with Stevenson on the 29th November at Patholi. On that day, after a 26-mile march, the English army came up with the enemy, who were drawn up on the plain in front of the village of Argaum. Although it was late in the day, Wellesley resolved to attack at once, and advanced his troops in one column. Emerging from cover into the open plain, two native infantry regiments, which were leading, came suddenly under the fire of fifty guns, and, being seized with panic, broke and fled. An officer who was present relates that "the General, who was close to the spot under a tree giving orders to the brigadiers, perceiving what had happened, immediately stepped out in front, hoping by his presence to restore confidence to the troops; but, "seeing that this did not produce the desired effect he mounted his horse and rode up to the retreating battalions; when, instead of losing his temper, upbraiding them, and endeavouring to force them back to the spot from which they had fled, as most people would have done, he quietly ordered the officers to lead their men under cover of the village, and then to



rally and get them into order as quickly as possible. This being done, he put the column again in motion, and leading these same runaways round the other side of the village, formed them on the very spot he originally intended them to occupy. This was at once a masterpiece of generalship, and a signal display of that intuitive knowledge of human nature only to be found in great minds. There is not one man in a million who, on seeing the troops turn their backs, would not have endeavoured to bring them again to the spot from which they had retreated; in this attempt it is more than probable that he would have failed; and in that case the panic would most likely have extended down the column, producing the most disastrous consequences. As it was, the retrograde movement was mistaken, by all but the troops which actually gave way, for a countermarch." Wellesley himself wrote with regard to this incident. "I am convinced that if I had not been near them to rally them, and restore the battle, we should have lost the day."

The enemy did not show much fight in the battle of Argaum, and was easily defeated. An incident related by Colonel Welsh, who was present, illustrates the effect that personal prowess and example have on the native mind. During the action Lieutenant Langlands of the 74th had his leg pierced by a spear thrown by an Arab, who then rushed at him with a sword to complete his conquest. But Langlands seized the spear and threw it with so true an aim that he transfixing his opponent, the weapon passing through his body at a few yards' distance. "All eyes were for an instant turned on the two combatants, when a sepoy of our grenadiers rushed out of the ranks, and patting the Lieutenant on the back, exclaimed, "Achcha, Sahib. Achcha kiya!" Such a ludicrous circumstance, even in the moment of extreme peril, could not pass unnoticed, and our soldiers all enjoyed a hearty laugh before they concluded the work of death on the remaining ill-fated Arabs." The drama was now drawing to a close. The Mahratta hosts in the Deccan, broken alike in organisation and in spirit, had been scattered to the four winds, whilst the victories of General Lake in the north had not been without their effect







rally and get them into order as quickly as possible. This being done, he put the column again in motion, and leading these same runaways round the other side of the village, formed them on the very spot he originally intended them to occupy. This was at once a masterpiece of generalship, and a signal display of that intuitive knowledge of human nature only to be found in great minds. There is not one man in a million who, on seeing the troops turn their backs, would not have endeavoured to bring them again to the spot from which they had retreated; in this attempt it is more than probable that he would have failed; and in that case the panic would most likely have extended down the column, producing the most disastrous consequences. As it was, the retrograde movement was mistaken, by all but the troops which actually gave way, for a countermarch." Wellesley himself wrote with regard to this incident. "I am convinced that if I had not been near them to rally them, and restore the battle, we should have lost the day."

The enemy did not show much fight in the battle of Argaum, and was easily defeated. An incident related by Colonel Welsh, who was present, illustrates the effect that personal prowess and example have on the native mind. During the action Lieutenant Langlands of the 74th had his leg pierced by a spear thrown by an Arab, who then rushed at him with a sword to complete his conquest. But Langlands seized the spear and threw it with so true an aim that he transfixed his opponent, the weapon passing through his body at a few yards' distance. "All eyes were for an instant turned on the two combatants, when a sepoy of our grenadiers rushed out of the ranks, and patting the Lieutenant on the back, exclaimed, "Achcha, Sahib. Achcha kiya!" Such a ludicrous circumstance, even in the moment of extreme peril, could not pass unnoticed, and our soldiers all enjoyed a hearty laugh before they concluded the work of death on the remaining ill-fated Arabs." The drama was now drawing to a close. The Mahratta hosts in the Deccan, broken alike in organisation and in spirit, had been scattered to the four winds, whilst the victories of General Lake in the north had not been without their effect











in this part of India also. There still remained the great stronghold of Gawilgarh to be captured. This fortress, standing on a spur of the Satpura Hills, like a sentinel guarding the passes to the north, can on a clear day be plainly seen from the field of Argaum. It was of immense strength, surrounded by dense forest and difficult to approach but was captured by assault after a short siege. A story is related regarding this siege which affords an excellent example of the manner in which orders, however difficult their execution may appear, should be carried out. Colonel Wallace was superintending his section of the operations when the officer commanding the working party came up and reported to him that it was impossible to get the heavy guns up to the battery. The colonel, who was brigadier of the trenches, exclaimed:—"Impossible! hoot mon! it must be done! I've got the order in my pocket!" It was done. Such is the spirit that overcomes all difficulties. History records many instances of the accomplishment of what has been considered impossible. The passage of the Alps would have been thought impossible had it not been accomplished by Hannibal and by Napoleon. The Mahratta powers surrendered on terms after the capture of Gawilgarh, the treaty being negotiated by General Wellesley. Regarding this treaty, the Governor-General wrote—"Your treaty is wise, honourable and glorious, and I shall ratify it the instant a copy can be made." Wellesley thus proved himself no less able as a statesman than as a soldier. In this connection it is interesting to quote one of the ablest military writers of our time, who says:—"The best officers must be on the same political level as the best men in the other professions and in public life. The men at the head of an army, the typical products of its corporate existence, ought to be intellectually and spiritually the peers of the leaders in other branches of life, on what Matthew Arnold called "the first plane," and in touch with the movement of national policy, and of literature, science and art. Only on the first plane can any man be a statesman, and unless the chief men of an army are statesmen, a nation will fight its battles in vain. The battles



may be won, but the fruits of victory will be lost.”\* The truth of this is exemplified throughout the Wellington Despatches, which are full of wisdom regarding both war and policy. Indeed one has only to remember that war is itself an expression of policy, to understand that this is merely a statement of the obvious.

History, which is philosophy teaching by example, is the true school of war, but it should be borne in mind that it is not the fact or event that imports, but the use we put it to or the lessons we derive from it. The lessons to be derived from a study of the careers of great men are exemplified not only in their deeds but in their characters, their methods, and their habits and mode of life. The ignorant commonly suppose that a general is born, not made. Character is no doubt the primary attribute of all great men, but Alexander, Turenne, Marlborough, Napoleon, Wellington were all students of their profession. Wellington was accustomed throughout his service to read and write for several hours daily, and Sir Robert Peel said that he considered him the most powerful writer in the English language, and quoted the line from Horace—“Scribendi recte, sapere est et principium et fons.”† Clear thinking and clear writing as a rule go together. Wellesley's devotion to duty, his habit of putting aside all personal considerations, whether on his own behalf or on that of others, in the interests of the public service, his integrity of character, constituted a tower of strength, and raise him to a height not reached by men who are merely successful, but are not therefore necessarily great.

After the successful conclusion of the Mahratta War, Wellesley accomplished much useful work in Mysore, and remained in India until March 1805, when he embarked for Europe, leaving his great name and example as an imperishable monument, exciting others to like deeds of glory, and serving at once to adorn, defend and perpetuate the existence of our Empire among the ruling nations of the earth.

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\*Spencer Wilkinson. “The Brain of an Army.”

†De Arte Poetica.



# **THE BAGHDAD RAILWAY AND ITS TRIBUTARIES**

BY

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The idea of connecting the Mediterranean with the Persian Gulf by an overland route, and therefore of shortening the journey round the Cape or across the Isthmus of Suez, was first suggested about the year 1835. Under discussion for many years, the original plan—a plan largely based upon the detailed survey made by Colonel Chesney in 1835-7—was to avoid Asia Minor altogether, and to start the proposed railway not from the Bosphorus but from some point on the Eastern Mediterranean. One proposal was for a railway from Alexandretta *via* Aleppo to the Euphrates and thence down the right bank of that river to Koweit ; or for a line starting from the same point, but crossing the Euphrates near Belis and subsequently following either the left bank of that river or the right bank of the Tigris to Baghdad and thence to the Gulf. Another idea was a line from Tripoli or Beirut through the desert *via* Palmyra to the Euphrates, and thence down the valley of that river to the sea. A third suggestion, about which but little is known, was to connect Ismalia with Koweit by a line which would have run practically due east and west.

Negotiations and pourparlers on the merits of these various lines were in progress for many years, a company being formed for the purpose of realizing Colonel Chesney's plan in the early fifties. This company being unable to raise the necessary funds, and the Government having refused its support to the scheme in 1857, the question lapsed until 1872, when it was referred to a Parliamentary commission, which approved of the construction of a line by the route advocated by Colonel Chesney. Subsequently, however, the idea was dropped in favour of one by which early in 1876 we purchased shares to the value of £4,000,000 in the Suez Canal, which had been open to traffic since 1869.



From this time onwards two reasons gradually led up to the idea of connecting not the Mediterranean but the Bosphorus with the Persian Gulf. The first of these was that, whilst in earlier times there was no railway nearer than Brindisi on the overland route to India, from 1869 onwards (as I described in a paper published in the *Geographical Journal* for April 1916) railways were gradually constructed by Baron Hirsch in the Balkan Peninsula, the through line connecting Constantinople with Western Europe being opened to traffic in 1888. This meant, if there was to be an overland route to the Persian Gulf at all, that such a route would naturally follow a line which would necessitate the shortest sea passage. The other, and from political and military points of view far more important, reason for the change of plan was that German influence, gradually developed in Turkey since the accession of the present Emperor to the throne, has been entirely directed towards the construction of railways which would not be easy of attack and communications which could not be cut by a group of Powers with the command of the sea. Thus, whilst a line starting from the Mediterranean would have been quite useless to Turkey or Germany as a means of through connection between the East and West, a railway broken only at the southern end of the Bosphorus gives to the enemy an iron road, the importance of which it is impossible to overestimate. Indeed, so long as the forts of the Dardanelles and of the Bosphorus remain intact, the Sultan and his Allies enjoy the advantages of naval power in a limited area—the Bosphorus, the Sea of Marmora, and the Dardanelles—without the possession of a fleet. This enables the Sultan and his Germanic Allies rapidly to convey troops or foodstuffs from Europe to Asia Minor, Syria and Mesopotamia, and *vice versa*, in the very face of the Allied Fleets, which are powerless to interfere in areas protected by defences which have proved, as one had to expect that they would prove, to be impregnable.

Before entering into a discussion of the history, geography, and construction of the Great Trunk Line, I will endeavour to show in a General way the actual meaning and political import-



ance of the railways of Asiatic Turkey as they exist to-day. Starting from Haidar Pasha, opposite to Constantinople, it is now possible to travel by train or by water across the greater part of the areas which lie between the Ottoman capital and Baghdad on the one hand and the Egyptian frontier on the other. As the Taurus tunnels were pierced in November 1916, it is probable that these tunnels are now open at least for goods traffic. If this be so, through communication has been established right across the Anatolian Plateau, along the Plain of Cilicia, and through the Amanus Range to a junction about 10 miles to the north of Aleppo. From here the northern prong, or Baghdad Railway proper, continues its way in an easterly direction as far as a point between the upper reaches of the rivers Euphrates and Tigris and certainly to Ras-el-Ain. At the other or Baghdad end, the railway has been completed in a northerly direction up to Samarra. If we take it that the respective termini are at Ras-el-Ain and at Samarra, this means that, out of the total distance of approximately 1500 miles from Constantinople to Baghdad, over 1100 miles can be accomplished by train.

The portion of the journey which cannot be performed by train is made up of two parts, the first of at most 223 miles, across the desert from Ras-el-Ain to Mosul. From here the stage to Samarra, about 165 miles, can be accomplished in boats and rafts floated or sailed down the Tigris. In addition, what is almost equally important is that, since the completion of the Taurus and Amanus tunnels, the railway thus constructed approaches and crosses the Euphrates at Jerablus. From that place there is an alternative means of communication with Mesopotamia by way of the Euphrates as far as Feluja, now connected by a light railway with Baghdad only about 35 miles to the east. The progress of the construction of the Baghdad line has therefore had its direct military advantages to Turkey in the Mesopotamian campaign; it also provides an easier and quicker means of communication between Constantinople and Eastern Asia Minor than would otherwise have existed with the Black Sea route closed to traffic. For instance, the distances to be covered by



road between Ras-el-Ain and the Bitlis district, or between the head of the railway and Kharput—a centre of the utmost importance—are considerably less than those which would otherwise have had to be traversed by road from Angora—formerly the nearest point in railway connection with Constantinople.

As far as Aleppo, about 840 miles from Constantinople, the Anatolian and Baghdad railways serve as a means of communication with the south as well as with the east. From Aleppo the southern prong, before the war owned partly by French companies and partly by the Turks themselves, (in this paper I must obviously speak of the pre-war ownership of the railways, for the Turks are believed to have seized all those which properly belong to companies of Allied nationality), runs by way of Hama, Homs, and Damascus for a distance of about 332 miles to Deraia. From this point there are two routes. The first is by the Hidjaz line, which continues its way in a southerly direction for 732 miles as far as Medina. The second bends from Deraia in a westerly direction towards Haifa, but before reaching that port turns south near Nazareth, ultimately extending as far as Bir Auja, about 35 miles to the south-west of Beersheba, and at a distance by rail of approximately 247 miles from Deraia. Although there is at least one break of gauge at Rayak, not at Aleppo as is sometimes stated, the strategical importance of these southern prongs—an importance which is sometimes ignored—is enormous. Indeed, it is the existence of these railways, some of which have only been built since the outbreak of the war, which rendered possible the threatened attack upon Egypt, an attack which, although it never materialized, at one time had a certain effect upon the general plan of the Allied operations.

The story of the numerous and various arrangements which have led up to the existing extension of railways in Asia Minor is closely connected with the gradual development of Germanic influence in the Near East. In 1888, the year in which through communication was established between Constantinople and the Western world, the only railways existing in Asia Minor were the Smyrna—Aidin, the Smyrna—Kassaba, the Mersina—Adana, and



the Haidar Pasha (Scutari)—Ismid lines. All these railways were completely, or at least practically, in the hands of English capitalists. The Scutari—Ismid line, which now constitutes the first section of the Anatolian Railway and which has a length of about 56 miles, was built by the Turkish Government in 1871. In 1880 it was leased to a British company for a period of twenty years, with the proviso that, subject to compensation, this lease could be broken at any time by the Ottoman Government. During the following years German diplomacy influenced the Porte forcibly to dispossess the British company, and, in the closing months of 1888, the line was handed over to a German syndicate financed by the Deutsche Bank of Berlin, which then became the moving spirit in all the schemes of Germanic railway construction in the Asiatic dominions of the Sultan. Moreover, the Germans secured two Imperial Irades, the one giving them the control of this line for a period of ninety-nine years, and the other granting them the right of extending it to Angora, and therefore for a further 301 miles. It was at the same time, too, that the Turks first accepted the idea of providing kilometric guarantees for railways, the principle of those guarantees being that the Government promises to the company a fixed sum as the gross annual receipts per kilometre of line open to traffic. This sum is handed over to the railway by the Ottoman Public Debt before that organization passes on its surplus to the Government. In the case of the Haidar Pasha-Ismid section the kilometric guarantee is 10,300 francs per kilometre, and in that of the Ismid-Angora section 15,000 francs per kilometre. The Anatolian Railway Company, which came into being in 1899, completed the railway to Angora, which was opened to traffic in 1892.

In the following year, which constitutes a very important epoch, the Germans were granted two further concessions. The first gave them the right of prolonging the railway from Angora to Kaisariya and thence through Sivas and Diarbekr and down the Tigris to Baghdad. This proposal was not carried out, ostensibly on account of the engineering difficulties, but really because of the hostility which it created in Russia. The idea of



this line has, however, never been completely given up, and, if we are to believe various authoritative publications in Germany, the existence of a concession for the construction of lines from Ada Bazar to Bolu, and from Angora by way of Kaisariya to Sivas on the north, and to Nigde and Ula Kishla on the south, is still held to be valid. Indeed, according to Mehrmann's 'Diplomatisher Krieg in Vorder Asien,' published in 1916, some 50 miles of a railway from Angora towards Sivas and Erzerum had actually been completed in November of that year. No details of this are however available, and therefore on the accompanying map the line is not shown as open beyond Angora. There is also good reason to suppose that part of the line from Ada Bazar to Bolu, following a route fully described in my book, 'Washed by Four Seas,' and for which a concession exists, has been completed since the beginning of the war. As there are no engineering difficulties between Ada Bazar and Duzjeh (to the east of that town one soon comes to the Bolu Dagh) it is probable, if any work has been done at all, that at least these first 40 miles are now open to traffic.

The second and all-important concession granted to the Germans in 1893 provided for the construction of what was then considered to be a branch line from Eskishehr to Konia. This line, which has a length of 269 miles and a kilometric guarantee (I believe amounting to about 12,500 francs per kilometre), was open to traffic in 1896. Its completion was most important, not only because it laid the foundation for the construction of the Baghdad railway by its present route, but because 100 miles to the south of Eskishehr it passes through Afium Karahissar and thus establishes railway connection between Smyrna and Constantinople by what is still known as the Smyrna—Kassaba Railway.

Although the primary object of this paper is to discuss the geographical aspects of the Baghdad Railway, the financial and political details of the Convention of 1903 (published as a Parliamentary Paper on the Baghdad Railway in 1911) are such that it seems advisable very briefly to refer to some of their principal



features. That Convention ensured to the company not only the right of building a line from Konia to Basra, more or less, though not exactly, by the route which it so far follows, but it also gave the right to construct branches, the most important of which were those from Sadijeh to Khanikin, and from Basra to a point on the Persian Gulf to be subsequently agreed upon, thus totalling nearly 2000 miles. The duration of the arrangement was to be for ninety-nine years, the existing concessions for the lines to Angora and Konia being prolonged for a like period. In reality the agreement lasts for a somewhat longer period, for it only begins to run from the time when the bonds are handed over for the construction of the various sections (each nominally 125 miles in length) into which the railway is divided. The first section had to be begun at once and completed in two years, whilst eight years was the period actually given for the completion of the line, which was not to be opened for traffic to the south of Baghdad until the whole length to the north and west of that place had been entirely completed. All sorts of facilities and rights were guaranteed and given to the company, including the power of constructing ports at Baghdad, Basra, and on the Persian Gulf. It was also to have the use of the rivers, Shatt-el-Arab, Tigris, and Euphrates for the conveyance of material and workmen required for constructional purposes. In addition the concession outlined almost unlimited directions in which the power of the company could be increased from time to time.

From Konia to Eregli the railway wanders over a sparsely populated plain. For the whole distance, and particularly between Karaman and Eregli, one sees nothing but miles upon miles of country, only very small parts of which are cultivated. The first section does not however end at Eregli, which would have been its natural terminus. In order to comply with the terms of the concession, which, as I have already pointed out, lays down that sections must be 125 miles in length, the railway was prolonged to a point a few hundred yards beyond Bulgurlu. Here, for years, a pair of rails laid upon a low embankment were



left to jut out into space, and to demonstrate that things in Turkey are not conducted in a normal manner.

Although strictly speaking it does not form part of the Baghdad Railway, no paper upon this subject would be complete without a brief reference to the scheme for the irrigation of the Plain of Konia—a scheme into the details of which I have entered in my book, 'The Danger Zone of Europe.' The work is in the hands of a German company, which was formed in 1907 as an offshoot of the Anatolian and Baghdad Railway Companies. Its task is to bring the waters of Lakes Beyshehr and Karaviran (Soghla Geul) through the gorges of the Charshembe Chai to irrigate a large district surrounding Chumla Station which lies about 25 miles to the south-east of Konia. If this has been or can be successfully done—a great deal of work had already been carried out when I was there in 1909—some 132,000 acres of arid plain will have been effectively watered. To accomplish this object more than 200,000,000 cubic yards of water will be required every year. Although even in dry seasons it has been ascertained that some 230,000,000 cubic yards of water can be obtained from the Beyshehr Lake, yet it is obvious that the expense of making the necessary canals, etc., will only be able to be recovered gradually by the Ottoman Government. This the Turks hoped to be able to do by selling portions of the land irrigated, by raising the rents upon the tenants, and by decreasing, if not altogether by doing away with, the balance to be paid on the kilometric guarantees of at least this section of the Baghdad Railway.

The completion of the first section of the line was followed by a prolonged delay. This was due partly to geographical and partly to political and international conditions. From the first of these standpoints the difficulty lay in the fact that the second section, which enters the Taurus area directly it leaves Bulgurlu, is the most costly of construction upon the whole line. This meant that as the company would be compelled to disburse the handsome surplus left over from the first section, it refused to agree to build the Taurus length unless it were given, at the same



time, the money for at least two sections located to the east of that range. From a political point of view the question was complicated, for, whilst the Turks had difficulty in providing and guaranteeing the interest on the necessary funds, there arose once more the problem as to whether international consent could be secured for the raising of these funds, and whether there was or was not to be international co-operation in the scheme.

After a great deal of difficulty, in June 1908—that is, two months before the re-establishment of the Ottoman Constitution—an additional Convention and an agreement for the second and third series of the Baghdad Loan Contract (published in the above-mentioned Parliamentary Paper) were signed between the company and the Government. The first of these documents slightly modified the original Convention, and arranged for the construction of four sections to measure not 800 but 840 kilometres and to extend as far as El Helif. The second provided for the money necessary for constructional purposes. The signature of these documents was in its turn followed by a further delay, this time caused by the temporarily changed conditions in Turkey itself. The revolution of July 1908 so shook the position of the Germans that for a time they did not know where they were. Moreover, for a limited period the power of the Ottoman Parliament became stronger and stronger, and the influence of the true Liberals, who desired to avoid the heavy financial burdens placed upon Turkey by the railway contract, became greater and greater. The result of this was that there intervened a great struggle between the opponents of the scheme and those who desired to modify the railway route on the one hand, and the Germans, together with the corrupt elements of the Ottoman population, on the other. Finally, the construction of the second section was begun early in 1910, but subsequently, for financial and other reasons, work was brought almost to a standstill. As a matter of fact, partly as a result of the Balkan wars, and partly owing to the engineering difficulties, to which I will now refer, the line was only open as far as Karapınar (about 90 miles by railway to the south-east of Eregli) at the time of the outbreak of war.



On leaving Bulgurlu, at an elevation of about 3700 feet above the level of the sea, the railway immediately begins to wind its way up the northern slopes of the Taurus. Following more or less the line of the old post-road the gradients are steep, but, as the country is open and rolling, engineers have been able to choose their own route, thus avoiding any serious constructional difficulties. Arrived at the watershed, known as the Karndash Bel (height 5070 feet), the railway continues its way for 2 or 3 miles and as far as Ula Kishla—the highest station on the whole line at an altitude of 4900 feet. A little to the east of Ula Kishla the traveller who follows this route by road or train enters a valley, at first followed by the Tabaz and subsequently by the Bozanti Su. That valley, the sides of which are bedecked with scattered trees, grows narrower and narrower until it becomes a mere gorge, in places so narrow that the river flows through a deep rocky crevice, where, before the construction of the railway, there was barely room for the road. On the south and west one has distant views of the snow-covered Bulghar Dag, whilst on the north and east one has occasional glimpses up side valleys which reveal distant mountain-tops, in winter covered in snow. The result of the limitations due to the existence of this gorge is that the construction of this stretch of line, about 35 miles in length, has been very costly, for it has entailed the provision of numerous bridges and lengthy embankments and a great deal of rock hewing to render it secure against floods and washouts.

At Ak Keupri (altitude 2985 feet) this gorge suddenly debouches upon the Vale of Bozanti (Podandus)—a fertile district about 4 miles long by 1 mile wide, in the midst of the Taurus Mountains. In this valley the railway and the new road constructed by the company diverge from the ancient trade route, which takes a more westerly line and passes through the Cilician Gates. Bearing off in a south-easterly direction the railway and new road follow the valley of the Chakra Su, which flows to the east of the Cilician Gates. This river runs from the Vale of Bozanti into the heart of the mountains and finally dives into a dark cave-like opening, to emerge again on the southern slopes of the range











after a subterranean course of some 300 yards. Prior to the construction of the railway the approaches to the places where this curious river enters and emerges from its subterranean course were. I believe, entirely unexplored by any European except by one or two railway engineers (from whom I secured information), who were compelled to cut down trees and make special paths in order to survey this untrodden area of the range.

The line was opened as far as Karapunar in December 1913. About a year and a half earlier (April 1912) it had been completed from the south to Dorak, on the southern slopes of the range. It was therefore the short section (roughly about 30 miles in length) lying between these two places which blocked through traffic from December 1913 until, as we believe, that section was actually completed last November. But the construction of this piece of line constituted by far the most difficult engineering task on the whole railway. In addition to four tunnels, which have a total length of about 11 miles, there was an immense amount of earthwork, cutting, and bridge building to be done. This work having been described in the *Geographical Journal* for December 1914, I will say only that some of the bridges over mountain streams have piers 50 to 100 feet high, and that in one place alone there is a cutting for a distance of some 2 miles. The new road itself, which was constructed entirely for railway purposes, is a very fine piece of work, for it required an immense amount of undercutting in the cliffs, which rise sheer above and fall vertically below it in such a way that wooden balustrades had to be provided to ensure against accident. From Dorak the line sweeps down the southern slopes of the range, and after about 15 miles meets the old Mersina-Adana railway at Yenije, about halfway between Tarsus and Adana.

After leaving the Bozarti Vale the old post road winds its way up to the Tekir Plateau or summit at an altitude just under 4500 feet. Thence, passing through scenery of the most magnificent beauty, it approaches the Cilician Gates. Here at 3600 feet the gorge is so narrow that the road is supported by a revetted



embankment over the stream. After leaving this historic gateway one continues down the valley of one of the tributaries of the Tarsus Chai (Cydnus), and after passing over the low foothills of the Taurus finally reaches the Mersina-Adana Railway at Gulek Boghaz—a station 3 or 4 miles to the east of Tarsus. It is this road, for years passable for strong vehicles, and recently, I believe, considerably improved, which was used by the Turks as a means of communication before the opening of the Karapınar-Dorak section of the railway. If we take it that troops coming from the north would have been detained at Bozanti Han, and that they would have joined the railway again at Gulek Boghaz, the distance to be covered on foot would be about 40 miles—a distance which took me about 14 hours in a carriage.

Once at Gulek Boghaz by road, or at Yenije by train, the traveller has reached the Cilician Plain—a very fertile district which is practically cut off from the remainder of Asia Minor by mountains. This fruitful area, which was the scene of the terrible Armenian massacres in the year 1909, is watered by the rivers Tarsus Chai, Seihun Irmak, and Djaihun. These rivers, which were once navigable in their lower reaches, are now only muddy channels which serve to carry vast volumes of water across the narrow plain from the mountains, in which they rise, to the sea-coast. The rich lands of the Plain are cultivated for cotton, wheat, and barley, which in peace time are exported from Mersinā—a modern seaboard town with a population of about 25,000 souls. The other principal towns of the Plain are Tarsus (population about 15,000) and Adana (about 40,000), lying respectively on the banks of the Tarsus Chai and Seihun Irmak.

This plain, which has an approximate length of nearly 100 miles from west to east, is traversed by the Mersina—Adana and the Baghdad railways. The former line, which was taken over by the Germans in the year 1908, since which time I believe it has been relaid at least between Yenije and Adana, now forms a branch of the Baghdad Railway. Originally built with English capital, and with a length of 41 miles (Mersina to Adana), it was opened in 1886. Its prolongation and development having



been opposed by the Anatolian Railway Company, it became the property of an Anglo-French group in 1896. There was no kilometric guarantee, but the line was fairly prosperous owing to the development of quite a large trade by way of Mersina. In spite of this, it was obvious from the moment of the inception of the larger scheme that it was bound to be swallowed up, not so much on account of its future expected development—Alexandretta will cut out Mersina as a port—but rather because the Germans were anxious to have the free use of it for the transport of railway material and rolling stock during the period of construction of the Baghdad line, and because they were anxious that there should be no competition, however ineffective, to a system to which they were devoting such close attention.

Although the concession for their construction was not granted until the signature of the agreement made between the Government and the Company on 19th March 1911—an agreement the main details of which, so far as they concerned Alexandretta, were published in the *Stamboul*, a French paper issued in Constantinople, and also by the late Mr. H. F. B. Lynch in the *Fortnightly Review* for May 1911—it is convenient to refer to the significance of the branch built to and of the port at Alexandretta before leaving the Cilician Plain. That concession constitutes the most important agreement made with the company since its foundation in 1903. In the first place it finally disposed of the idea of a modification in the original route—a modification the negotiations for which would have taken the main line by way of Alexandretta to Aleppo instead of by the present more northerly route *via* Baghche, and which were in part responsible for the delay which occurred before the commencement of the construction of the second and third sections of the line. The fact that this modification was not accepted, and that the line now follows (with certain changes to which I will refer below) the route originally defined by the concession, means that in place of running absolutely along the seacoast for a good many miles the railway now approaches the coast nowhere within a distance of less than ten



miles. Under German influence the Turks have thereby avoided what would have been a continual menace to their communications from the sea, for, whilst the section of the railway in the neighbourhood of the Gulf of Alexandretta is still the one most easy of attack, that attack would now constitute a far larger undertaking than were the line to have run close to the water's edge.

Politically and commercially the right given to the company to construct the branch to and the port at Alexandretta went far beyond anything foreseen in the original concession. The Turks were already committed by Article 12 of that arrangement not to grant concessions for railways running to the coast between Mersina and Tripoli to any group except the Baghdad company. But this did not anticipate the giving to it rights to be enjoyed for a period of ninety-nine years from the time of the completion of the railway to Helif, rights which really amounted to a lease, and facilities which might almost be compared to those formally enjoyed by the Germans at Kiao-Chao. The concessionaires obtained the power to build quays, docks, and warehouses, and to police a port which, unlike Haidar Pasha within closed Turkish waters, is situated in an area over which the Turks could not have direct control so long as they did not possess the command of the sea. Commercially speaking, too, the acquisition of such a prize was of supreme value to Germany, for the possession of Alexandretta once and for all removed any danger of competition for the Baghdad Railway. Thus, as it is obvious that goods coming from or going to the interior are always destined to be exported from or imported at the nearest convenient point on the sea-coast, the provision of a port at Alexandretta was clearly destined to prevent the French railways of Syria from competing with the German systems, and to make Alexandretta the natural door to districts which might otherwise have been tapped by rival lines.

The Cilician Plain practically ends at Osmaniya, to the east of which place the railway once more plunges into the mountains to force its way through the Amanus Range, here known as the



Giaour Dagh. The passage entails a rise from under 500 feet above the sea to about 1750 feet above that level. After leaving Mamoure, the last station on the plain, the line follows the valley of the Baghche Su, passing through seven small tunnels and over eight steel bridges, the former having a total length of over 2000 yards. Thus during a distance of only about 20 miles it rises 1200 feet and reaches Baghche—a village from which the great tunnel takes its name. Before entering that tunnel, the dimensions of which I give as they appeared in the *Osmanischer Lloyd*, a German paper published in Constantinople and quoted by the *Near East*, the line passes through two smaller ones, the lengths of which are respectively about 70 yards and 130 yards and over a small bridge. The great tunnel, which is still, I believe, the longest in Turkey, has a length of over 5300 yards. For about 5300 yards it ascends to 245 feet above the level of the entrance. Thence it begins to descend and finally emerges at a height about 200 feet above the level of its western entrance. Between this point and Islahiya station, about 1500 feet above the sea, there are four more tunnels having a total length of over 1100 yards. Thus, whilst the passage of the Amanus Range is much shorter than that of the Taurus, the engineering difficulties were such that the completion of the Baghche tunnel during the late summer of 1915 delayed the opening of the section, which lies between Mamoure and Radjun, for a period of nearly three years from the time when it was possible to reach these temporary termini by train.

It is here and immediately to the east of the Amanus Range that a modification in the original trace has taken place. In place of running from Baghche to Kazanali, thence across the Kurd Dagh and through Killis and Tel Habesh to the Euphrates, the line now turns in a southerly direction near Baghche. Passing through Islahiya it subsequently follows the valley of the Kara Su and passes round the south-western end of the Kurd Dagh. Instead of making Killis, or more correctly Tel Habesh, the junction for Aleppo, and of necessitating the construction of a branch, foreseen in the original concession, from Tel Habesh to



Aleppo, this means that the main line passes close to Aleppo itself. The result is that instead of an Aleppo branch, about 40 miles in length, the actual junction is made at Muslimiya, only 10 miles to the north of Aleppo.

To the north-east of Aleppo the next important landmark on the railway is the Jerablus (Carchemish) bridge which spans the Euphrates. From Jerablus, according to the same authority, a branch some 25 miles in length has been opened to Berijik. With a length of about 850 yards the non-completion of this bridge delayed effective through communication from December 1913 (when the section to the west of the Euphrates was opened); for although a temporary wooden bridge was finished in 1913 the steel bridge, made up of many spans, was not reported finished until 1915. To the east of the Euphrates the railway continues its way in an almost due easterly direction, leaving Urfa and Harian to the northward. In the neighbourhood of the Belik River it crosses several bridges, proceeding thence at least as far as Ras-el-Ain on the river Khabur. But considering the fact that the line was opened as far as Tel-el-Abiad (about 65 miles to the west of Ras-el-Ain) so long ago as February 1915, and as no serious engineering difficulties exist in this area, I think it must now be in working order certainly up to El Helif and just possibly to Nisibin. If El Helif be the terminus it means that all the work on the main line arranged for by the agreements made between the Government and the company in 1908 has actually been completed, and, taking the Taurus tunnels as available for traffic, that it is now possible to travel without any break for a distance of over 1100 miles from Haidar Pasha. In addition, according to reports which have recently reached this country, by the orders of the German General Staff a branch is now being built from Ras-el-Ain to Diarbekr, the rails belonging to the French line from Homs to Tripoli having been taken up in order to further that object. Whether the details of this report be actually true, or whether a branch, for which a concession exists, is being constructed from El Helif to Diarbekr by way of Mardin, remains to be proved. But having regard to the strategical value



to the Ottoman Government of any line running up from the Baghdad route towards areas in which a determined attempt would certainly be made to oppose an Allied advance from the east, it seems highly probable that the Turco-Germans would leave no stone unturned to develop their railway system in these districts at the earliest possible moment.

We come now to the new Conventions signed between the Ottoman Government and the company on 19th March 1911, and to the sections of the railway which have or have not been constructed since the arrival at these agreements. Over and above the rights given to the Germans of the construction of the Alexandretta branch and of the port of Alexandretta (Conventions 2 and 3) to which I have referred above, we have in these arrangements firstly the provision for the building of the line from El Helif to Baghdad, and secondly some sort of German undertaking in regard to the ownership and control of the section to be built from Baghdad to the Persian Gulf. The arrangements made for the prolongation of the line to Baghdad are given in the *Stamboul* for 20th March 1911, but no reference is made there to the agreements about the last section, concerning the general sense of which we have certain information, but the definite details of which, so far as I am aware, have never been published.

With regard to the first of these questions, sufficient be it to say that the railway has been planned to take the original trace by way of Nisibin to Mosul. Between the last two places it follows, not the usual route by way of Jezire, but strikes south-east, first across a plain on which there are a few villages, and then into the desert, which is almost entirely unpopulated and where there is but little water. From El Helif to Mosul, a journey reckoned to take at least thirty hours by road, the distance is approximately 150 miles. There is no reason to suppose that any part of this section or of the proposed branch from Mosul to Erbil (length 62 miles) has yet been constructed. From Mosul, from which point river transport can be utilized, the railway is planned to cover the length of 240 miles from Baghdad by way of the regular trade route, which follows the right bank of the



Tigris and passes through Hammam Ali, Tekrit, and Samarra. So far as we know no work has been done from the northern end of this section or upon the branch from Sadiya to Khanikin; but the piece from Baghdad to Samarra, built from the southern end and having a length of about 75 miles, has been open to traffic since October 1914. About eighteen months ago it was reported that the line was in working order as far as Tekrit, about 32 miles further to the north. In view of the facts that the known date of the completion of the Baghdad-Samarra section was just before the entry of Turkey into the war, that it was foreseen by the original concession that material for this part of the line would be imported by way of Basra to Baghdad, and that we occupied Basra on 21 November 1914, the reliability of this report always seemed doubtful, for it would have been practically impossible for the Turks, with the approach from the south closed, to obtain sufficient rolling stock to work the extra piece of line. In any case misgivings upon the subject seem now to have been removed, for, telegraphing from Baghdad on 15 March 1917, the accredited Special Correspondent—Mr. Edmund Candler—definitely says that the railhead is still at Samarra.

In addition, by the agreements of 1911 the company is believed more or less to have renounced its exclusive right to the construction of the section from Baghdad to the Persian Gulf in exchange for the Alexandretta concessions, for the promise of the allocation to it of certain revenues, and for the undertaking that it should receive a share in a new Company to be formed for the construction of the Gulf section. From a geographical standpoint all that can be said upon this question is, therefore, to point out that to the south of Baghdad the line, with its length of about 360 miles, was to leave the Tigris near Baghdad, and after crossing the Euphrates, probably somewhere near the Hindiya Barrage, to run through Kerbela and Nejef to Basra. There was to be a branch to Zobeir and a prolongation from there "to a point on the Persian Gulf to be agreed upon between the Imperial Ottoman Government and the concessionaires." It is unnecessary to say here that the locality of that point constitutes



one of the most important factors in the whole scheme, and that no decision upon the subject has ever been arrived at.

Were it not that the war, and particularly the British advance in Mesopotamia, cannot fail to obliterate many of the more important results of the events which preceded and followed the signing of the new agreements between the Turkish Government and the company in March 1911, those events might be of political consequences, the far-reaching significance of which it would be impossible to exaggerate. The signature of this agreement almost immediately followed the meeting of the Tsar with the Emperor at Potsdam in November 1910, a meeting during which the relations existing between Russia and Germany were temporarily adjusted. Though the exact nature of that arrangement was not known until afterwards it is now certain that Russia agreed no longer to oppose the construction of the Baghdad Railway, and either herself to build or allow the Germans to build a line from Khanikin—the terminus of a branch already agreed upon between Turkey and the Baghdad Company—to Teheran. As compensation for this the Russian position in Northern Persia was recognized by Germany. It remained then for Berlin to treat with England and France for agreements concerning future developments in their respective spheres. The Tripoli War of 1911 and the Balkan War of 1912 were not, however, favourable periods for negotiation, and it was thus only in 1913 that Turkey, in agreement with Germany, dispatched to London the ex-Grand Vizier—Hakki Pasha—to try to bring about agreements to be drawn up between the Foreign Office, the German Embassy, and the Ottoman Embassy—agreements to settle the outstanding differences as regards the Baghdad-Persian Gulf section and other cognate matters of river transport in these regions. These agreements presumably presupposed a continuance of friendly and peaceful relations between Turkey, Germany, and Great Britain, and it is believed that they were practically already concluded when, in August 1914, Great Britain found herself compelled to declare war on Germany, Turkey subsequently throwing in her lot with the enemies of this country.



Before passing to a brief description of the Syrian railways there are still two questions which must be mentioned in connection with the Baghdad line. The first concerns the facilities which it provides, or which it may, for actual travel. By the specification for the railway, signed between the Turkish Government and the company in 1903, the line is to be single, the gauge is to be the normal continental one (4 feet 8½ inches) and the stations or passing places are to be separated by an average distance of about 12½ miles. The same document provides for a maximum rise and fall in the gradients, and lays down that the construction shall be such that, in case of need, an average speed of about 45 miles per hour, including stops, can be maintained over the whole line. It also stipulates for the provision of at least one daily mixed train in each direction, and for the running of a weekly express train between Haidar Pasha and Aleppo and *vice versa*, and for a fortnightly express between Constantinople and the Persian Gulf and *vice versa*. These express trains were to run at an average speed of about 28 miles per hour, including stops, for the first five years from the opening to traffic of the whole of the main line, that speed subsequently to be increased to 37 miles per hour including stops. This means that, were the said express train to run at its lower speed, the journey from Constantinople to Baghdad would be accomplished in about 54 hours, and from the Turkish capital to Basra in about 66 hours. Taking the pre-war time necessary for the journey from London to Constantinople by Orient Express and allowing for a very short delay at the latter place, we can take it that theoretically it would be possible to travel from London to Basra in about 144 hours, that is in six days. From Basra to Bombay the distance is just over 1900 miles, which, at say 20 knots, could be accomplished in about 84 hours. Thus taking all the conditions at their most favourable value from the point of view of the Baghdad Railway, and allowing a margin of only a few hours at Basra, travellers and mails could be conveyed from London to Bombay by that route in between nine and ten days, instead of as before the war in between thirteen and fourteen days. This of course



shows a considerable nominal saving in time—a saving which might even be increased by running fast ships from Basra to Karachi and by improving the train service between the latter place and Bombay. But against the advantages of that nominal saving must be set the facts that the journey by way of Brindisi and the Suez Canal could be speeded up, and that on the great cross-country journey from Constantinople to the Gulf there would be bound to be considerable delays and irregularities in the running of the trains, delays due among other things to the conditions prevailing in the areas through which the line would pass.

Prior to the outbreak of the war the tourist desirous of travelling by the Anatolian and Baghdad railways was certainly not provided with comforts which would have led him to choose such a route in preference to one followed by a first-class ocean steamer. Leaving the bridge at Constantinople at an early hour in the morning he crossed the Bosphorus in a steamer run in connection with the train. From Haidar Pasha to Eskişehir, a distance of only 195 miles, the first stage of the journey took  $10\frac{1}{2}$  hours. As there were no night trains one was compelled to sleep at the latter place, starting at five a.m. on the morrow for Konia, which is reached after a journey of fifteen hours. At Konia the company had built a new hotel which, though much cleaner and better than those which ordinarily exist in the interior of Turkey, was still less comfortable than one would suppose from its pretentious appearance. Starting once again at 6-30 a.m. one could travel 190 miles to Karpuzlar in eleven hours, at a speed of only about 18 miles per hour. When I went for the first time to Eregli, soon after the opening of the railway, one travelled in old-fashioned non-corridor carriages which were neither heated nor provided with the ordinary comforts available on long journeys. On a subsequent occasion I found first-class rolling-stock which compared quite favourably with that run on express lines in Germany. Practically nobody except ambassadors, high officials of the state, and those provided with passes travelled first-class and as the majority of the pas-



sengers were natives who cannot afford anything better than third, the second-class passenger when he got well into the interior was generally the sole occupant of a carriage. The trains were mixed, of passenger coaches and goods waggons, and therefore at all the larger stations one stopped for a sufficient time to allow for the loading and unloading of goods.

From a military point of view, over and above the advantages of railway communication to which I have already referred, the opening up of the country has enabled the Ottoman Government to quell more than one insurrection in distant parts of the empire. In recent years this facility has been particularly valuable in the case of the Hidjaz, where there have been several rebellions. Moreover, the existence of railways renders possible a comparatively rapid mobilization of at least parts of the army. But this in its turn has rather a curious effect, for it means that military service is not only much more strictly enforced among the sections of the population domiciled near to railways, but that the reserves furnished from these districts are often called out long before much younger men, recruited from more remote districts, have performed their military obligations. During the last six years of almost continuous war the consequences of this are that a very unfair burden, which is greatly resented by those who have had to bear it, has been placed upon the men who come from easily accessible areas, and that the Ottoman first-line army, instead of being composed of all the younger men of the country, often contains units made up by those who ought to be utilized only in the second line of the Turkish fighting machine.

Turning to the Syrian railways, which geographically speaking form a sort of southern prong of the Baghdad Railways, I will discuss those lines in their relation to the German system, and therefore from north to south rather than in the order in which they were constructed. To begin with, since the end of 1906, when the section between Aleppo and Hama was open to traffic, a French line, owned by a company known as the "Damas Hama et Prolongements," has united the former town



with Rayak on the line from Beirut to Damascus. With a total length of about 206 miles, the railway, built on the normal continental gauge, has a kilometric guarantee amounting, I think, to 13,600 francs per kilometre. Its existence depends upon various arrangements made between the Government and the company in and subsequent to the year 1893—arrangements the details of which are very fully set out by Mr. George Young in his '*Corps de Droit Ottoman*.' The whole line was of easy construction, for it follows the plain and passes through fine cornland, which is not liable to floods, as the rivers run in deep trenches. There is one big bridge over the Orontes at Hama, but otherwise no other structures of any engineering significance. The normal-gauge branch from Homs to Tripoli, with its length of about 65 miles, which belongs to the same company and which was built without a kilometric guarantee after the re-establishment of the Turkish Constitution, is believed to have been taken up in order that the material might be utilized for construction elsewhere.

Unless it has been widened since the beginning of the war, which is very unlikely owing to the great length of line which would have had to be altered, there is a break at Rayak, all the railways to the south of which point being of a narrow gauge. Here we meet the French system, known as the company of the "*Chemin de Fer Beyrouth-Damas-Hauran*," which owns the line (about 155 miles in length) connecting Beirut with Damascus and Mezerib, the latter about 6 miles to the west of Detaia. This railway, which has been open to through traffic since 1895, and which has no kilometric guarantee, is built upon the somewhat exceptional gauge of 3 feet 5·34 inches (1·05 metre).

Starting from Beirut harbour the railway, which is on the Abt system (an engine that can work either by adhesion or by cogwheels and central rail), climbs up the Lebanon for about 5000 feet to a point just above Ain Sofar. Thence it winds down to the valley of the Bekaa, in which is Rayak Junction. The gradients are very steep, and therefore even with the rack and pinion system short trains are compelled to go at a foot pace. To the east of Rayak the railway continues across the plain, un-



til it is compelled to cross the Anti-Lebanon, where the gradients, heavy enough to limit the load very closely, are not sufficient to necessitate at any point the use of the cogwheel system. To the south of Damascus the French line, which is believed to have been taken up since the war in order that the material might be utilized for construction elsewhere, ran practically parallel to and on the west of the Hidjaz line. From Beirut to Yunie there is a steam tramline belonging to the same company, which follows the coast for about 10 miles.

We now come to the Hidjaz Railway, to which I will only make the briefest reference, for the subject has already been fully dealt with in a paper by Colonel Maunsell which appeared in the *Geographical Journal* for December 1908. The line, which is of the 105-metre gauge (adopted in order to correspond with that of the Beirut-Damascus line, by which rolling stock, etc., had to be imported), starts from Damascus. Built by the Turks themselves with the assistance of foreign engineers, and particularly with that of Meissner Pasha—a very able German—the railway 820 miles long was opened to traffic as far as Medina towards the end of the year 1908. Though it was often broken by raiding parties, from that time until the outbreak of the war it was available for military transport purposes to and from the Hidjaz, and for the pilgrims for whose use it was largely constructed. Never completed to Mecca or prolonged to the coast of the Red Sea as proposed, the railway runs through districts in which for years the Turkish position has been so far from stable that since the beginning of the war it could probably not be safely used beyond, even if as far as, Maan. In addition to the line to Haifa, to which I will refer in greater detail below, the Hidjaz Railway has a branch (22 miles in length) which connects Bosra with Deraia. According to *Petermanns Mitteilungen*, July 1915, it also has a French feeder (25 miles in length) running from Amman to Es Salt, a feeder which it was no doubt intended should be prolonged across the Jordau Valley to Jerusalem.

There now remain only two Syrian lines which were open to traffic before the outbreak of the war. The concession for the



first of these—the Haifa Railway—having been given in 1890, that line was partly built by a British company. The then existing works were purchased by the Government in 1902, and the railway, which now has an extension from Haifa to Acre, and which is built on the 1·05 metre gauge, was finally opened to traffic in May 1906 as a branch of the Hidjaz line. The second, to which no special reference is necessary, is the Jaffa-Jerusalem line, the concession for which was acquired by a French company in 1889. Built on the 1 metre gauge, with a length of 54 miles, the line was opened to traffic in 1892.

Such was the condition of things in Syria on the outbreak of war. Before that time, however, it had been often proposed that a normal-gauge railway should be constructed on the west of the Jordan in order to prolong the line from Rayak at least as far as Jerusalem. I believe that a concession had been actually granted to the French for a line from the former place to Ramle on the route already open from Jaffa to Jerusalem. Needless to say work upon this section was never begun, and its place has been taken by a line built by the Turks themselves. That line (presumably constructed upon the 1·05 metre gauge, in order to correspond with the Hidjaz and Damascus-Beirut systems) starts at El Fule on the Deraia-Haifa branch. Keeping well inland, it runs in a southerly direction (there is a considerable detour near Nablus) to Lydda on the Jaffa-Jerusalem Railway. From this point (to the west of which the Jaffa line is believed to have been taken up) the new line follows the old route (the gauge has probably been changed) to Lydda, where it leaves the branch to Jerusalem and continues its way *via* Beersheba at least to Bir Audja. No details are available concerning this section, the length of which must be roughly 160 miles. But it is obvious that, if sufficient rolling stock be available (the metre stock from the Jaffa-Jerusalem line can probably be utilized with or without adaptation), its completion rendered possible the threatened attacks upon Egypt during the earlier stages of the war, and that its existence must play a considerable role in enabling the Turks to bring up reinforcements and supplies to an area in



which in the future there may be developments of all-preponderating importance.

The present is a moment at which it is difficult, if not undesirable, to make a detailed forecast as to the future of the Baghdad Railway, and of the other lines in Asiatic Turkey. The only alternative is therefore to say that two things seem certain—firstly, that sooner or later the Baghdad or some other line from the Bosphorus to the Persian Gulf will be completed; and secondly, that its ownership and control will depend not so much upon any agreements already made as upon the results of the war and particularly upon the fate of Turkey. For years the Germans have turned their attention towards the East and towards the development of an influence which, so to speak, pivots upon the Baghdad Railway. It is for this reason that, whatever concessions may be offered to them near at home, the Allies must leave no stone unturned to prevent the conclusion of a peace which would leave the enemy still possessed of the predominating control in an undertaking which, once it is robbed of its political significance, can easily be established upon an international basis and controlled as a result of the adoption of some scheme of internationalization.

It is too early definitely to lay down the form of that internationalization. It must depend upon the future status of the now Asiatic Dominions of the Sultan. If there are to be spheres of influence or protection, then the main lines and their branches in these various spheres must pass under the control of the Power most closely interested in the area in question. That control will have to be extended in such a way that the susceptibilities of the races which make up the population shall not be offended. If on the other hand Asiatic Turkey be not divided into such spheres, or if only part of it be so divided, then, as I do not believe that the Turks can manage their railways without foreign assistance, some scheme of internationalization will have to be devised for the railways in the areas still left under the direct rule of the Sultan. Whether that scheme should give to each country or to each group of countries the lines in a particular district—a plan at one time suggested for the Baghdad





RAILWAY AND ITS TRIBUTARIES, 1917.







Railway—or whether the railways in question should be internationalized as a whole, are questions which cannot be decided until the advent of peace. But however this may be, it is clear that arrangements should be made guaranteeing to Great Britain, France, Russia, and Italy the safety of their respective positions in areas in which each of those countries is possessed of special interest. In short, whilst in the future, as in the past, it is worse than useless to oppose the construction of a line which must become a real factor in the communication between different parts of the world, it is once more open to us to prevent the prolongation of a situation which, were it to continue, would sooner or later be almost certain to lead to a renewed international conflagration.

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## **TRANSLATIONS FROM RUSSIAN NEWSPAPERS.**

*"The Rech."*

*15th and 28th April 1917.*

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### **A Separate Peace.**

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A few days ago—says the Rech—when we discussed the questions confronting Russia and asked whether the conclusion of a separate peace was not a possible intention, the "Den" ("Day") was very contemptuous and even sought to find "insinuations" in our article.

A few days later this paper found itself compelled to pay attention to this question and explain carefully what is the reality that lurks behind the words "separate peace." It has carried out its task well, for Professor E. Tarlé has expounded the position clearly, entirely from the concrete and practical standpoint, leaving out all questions of honour, treachery etc.

He asks:—"Would a separate peace bring in reality peace or would it bring war, immediate war, more terrible than that, from which deserters so plausibly ask us to turn away?" The answer is as short as it is striking and emphatic. "It would bring war, war more terrible than the present one. Russia would become but an economic colony of Germany, its Hinterland in fact, while war would continue under different conditions, that is, against another coalition of enemies, Russia's former allies, burning with hate and indignation. The hands of all would be loosened and—Vladivostock and the Amur provinces are a far more attractive prize than just Tsing-Tau. It would be too optimistic to expect that not only Russia but all the other nations are ready to give up the struggle for their rights and the freedom of mankind, lay down the sword and condemn themselves to death."

There can be no doubt—says the Rech—that this is the correct answer and that the only result of a separate peace would be more war and yet more prolonged suffering, without even the present hopes of ending both within reasonable time.



If anyone requires further proof, the Germans themselves supplied it in 1909, when Professor Delbruck, now Minister of Internal Affairs, wrote two articles, one on Napoleon and one on the international situation. In the second he said that Napoleon's period much resembled that of the present day and therefore demanded close study; the essence of Napoleon's period in Delbruck's opinion was, that, as Napoleon himself correctly judged, England forced Napoleon to overrun the continent and England broke his power. Delbruck lamented the fact that Germany was putting herself into the same position as Napoleon and foresaw a European coalition against Germany, and an extremely dangerous one too. This coalition and more than the one he foresaw has come into being, and the great German trump card—difference of interests between the allied powers and their gradual dissolution—has not come to pass: on the contrary the coalition grows larger and closer every day. But the mere mention of it shows that Germany is now trying to play this trump and is deliberately working to get Russia to play it for her.

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**"The Russky Invalid."**

*25th April and 8th May 1917.*

In a leading article entitled: "For what are we fighting?" the Russky Invalid says, "In very truth, if Russia desires neither annexations, nor indemnity nor conquest of foreign territories nor exploitation of conquered lands by means of heavy money levies, what is the object for which we Russians are fighting?"

It points out in the plainest terms that Russia is fighting primarily for her own defence and that those who clamour for an immediate peace with Germany seem to forget that any peace that could be obtained now would be a peace of humiliation, for—apart from the betrayal of her allies—Russia has lost 16 provinces to Germany, against which she can only set off a small strip of Austria and Turkey.

Again, the Allies of Russia now include England, France, Italy, Japan, Serbia, Roumania, Portugal, Belgium and the United



States! These, taken together, are immensely stronger than Russia, so that instead of there being only one course open to the Germans, which is all the Russian pacifists can see, there are two:—to make peace with Russia and find herself free to devote all her attention to the Western European front: or the reverse, namely, to make peace with France and England and then turn on Russia. As we have pointed out we are weaker than our allies and to war-worn and exhausted Germany we represent the easier prey and it is therefore evident that the Germans might easily prefer to take the line of least resistance. Such a turn of events would spell absolute ruin for Russia: Germany would take what she wanted, Austria would do the same, Turkey would take the Caucasus and Japan all eastern Siberia, for we could hardly expect our allies to look on while we started negotiations with Germany.

This road, which Lenin & Co., lately returned from Germany, invite Russia to take, would reduce Russia to the state she was in in the times of Ivan Kalit before the Moscow kingdom was established. The Russian people would be crushed under the enormous taxes necessary to pay indemnities, to pay the interests on previous loans and to keep up an enormous army and fleet, which would have to continue, were Germany not absolutely deprived of her military power.

As for the slogan "no annexations, no indemnities" this talk is foolish and premature in the extreme: to lay down terms of peace one must be the victor, and Russia can certainly not claim to be that. Hopes of a German revolution are also vain, for even the socialists in Germany realize that, if a German revolution were to bring about her defeat, she would have to pay dearly for all her misdeeds and evil-doing.

To sum up:—

The first and immediate object for which Russia is fighting is the salvation of Russia from a German invasion.

The second and remoter object is the crushing of German militarism so as to ensure that humanity will never again be exposed to another war as awful and ghastly as this one.



If people reply that we can hardly count on achieving this second object since Germany is stronger than we are, we reply "Onlookers see most of the game. If after 2 $\frac{3}{4}$  years of war the state of Russia and her allies were very parlous the United States would hardly have joined us: and if the free American nation have entered this war without, as they truly say, any aims of conquest whatever, we may be sure that right is on the side of Russia and her Allies".

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## **QUARTERLY SUMMARY OF MILITARY NEWS AND ITEMS OF INTEREST.**

### **ARMY HEADQUARTERS.**

**707. Pay and Allowances.**—In continuation of India Army Order 25th June 1917. 364 of 1917 the Government of India have decided that British officers who are ordered to attend investitures at Delhi or Simla for the purpose of receiving decorations awarded for field service shall be granted detention allowance for a period not exceeding three days in any one case. This decision is subject to the condition that the allowance is drawn. -

**763. Officers.**—The following Army Council Instruction, dated 30th April 1917, is republished:—

#### **705. Refund of Medical Expenses.**

1. The attention of all officers should be specially directed to paras. 477 to 492, Regulations for the Army Medical Service. Except as specified in paras. 484, 485 and 486, claims for reimbursement of medical expenses on account of the services of civilian medical practitioners or nurses employed privately by officers of the Army, or on account of hospital or nursing home expenses, will not be entertained. Claims for the repayment of medical expenses of officers' wives, children, or servants, are in no circumstances allowable.

2. Medical Boards, when recommending officers for special leave under para. 1 (VII) of Army Council Instruction 423 of 1917, will instruct the officer to apply to the nearest military hospital for any medical attendance he may require, but if the conditions of para 483 of the above quoted regulations cannot be complied with, or the officer cannot attend as an out-patient, he should be given clearly to understand that he has no further claim on the public, and that he must make his own arrangements.

**770. Dress.**—Army Council Instruction No. 693 of 1917 is republished:—

#### **693. Ribands of Foreign Orders, Decoration and Medals.**

\* Republished in  
India Army Order No.  
457 of 1917.

1. Army Council Instruction No. 372\* of  
1917 is cancelled.



**771. Dress—British Officers.**—His Excellency the Commander-in-Chief directs attention to the commands of His Imperial Majesty, the King Emperor of India, notified in the Gazette of India of 4th June 1917, as regards the method of wearing the badges of the Most Honourable Order of the Bath, the Most Exalted Order of the Star of India, the Most Distinguished Order of St. Michael and St. George and the Most Eminent Order of the Indian Empire by Companions of the said Orders.

In obedience to His Majesty's Commands the badges of the above Orders will be worn suspended by a ribbon round the neck in Review Order. They will also be so worn in evening dress on the occasions specified in sub-paragraphs (1) to (5) of paragraph 54, Army Regulations, India, Volume VII, line 5 of the foot note to those sub-paragraphs being read in future to include C.B., C.S.I., C.M.G., and C.I.E.

In Mess Dress, Companions of the Orders above named will continue to wear only the miniature decoration and not the badge.

**899. Dress—British Officers.**—With reference to Army Regulations, India, Volume VII, paragraph 21 (as amended by October Appendix—98 India Army Order—1914), a plain gold safety pin worn under the tie to keep the soft collar in place, is permissible in service dress.

**919. Furlough and Leave—Officers.**—The Government of India, with the approval of the Right Hon'ble the Secretary of State for India, have sanctioned the application of "Combined leave" to the British Army in India and the abolition of the limitation of eight months laid down in paragraph 222, Army Regulations, India, Volume II.

The relevant regulations will be amended in due course.



## REVIEWS OF BOOKS.

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*From the Wireless Press:—*

*The Year Book of Wireless Telegraphy and Telephony, 1917.*  
(3s. 6d. net.)

This is the fifth issue of this handy work of reference and, although the size of the book has greatly increased, the price has remained the same. The opening chapters form a history of wireless telegraphy, from the discovery of the electro-magnetic induction by Faraday in 1831 to the bridging of the Pacific by a commercial radio service in 1916. This interesting resumé is followed by the texts of the various International Conventions relating to wireless installations. Lists of land and coast stations, with their radii of action, etc., are necessarily in this time of war incomplete in some details, but every care seems to have been taken to make the book as up to date as possible. Although much of the work is of a purely technical nature, there is plenty to interest the general reader in the stirring tales of wireless operators' heroism, the "Wireless Drama" of Alfred Noyes, and the articles on the achievements of wireless telegraphy. The work is well illustrated and contains a map of the world in which all wireless stations are marked.—*The Pioneer.*

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*Ambala to Peshawar by motor car. By Lt.-Col. H. A. Newell. (Re. 1. Civil and Military Gazette Press).*

This work is apparently the first of a series of hand-books on the high-ways of India and intended as a guide to all places of special interest passed on the road. Such guide books should be of great value to the motoring public, poorly catered for as it is in the matter of maps and guides. There is little of value however, to the motorist in the present work, and what there is is so hidden away in unnecessary and annoying packing that it is hard to come by. Moreover, work which sets out to be a guide to places of special interest passed on the road and omits all mention of Ludhiana and Amritsar somewhat fails to fulfil its primary object.



Properly carried out, however, there is no doubt that there would be a great demand for a work of this nature. If the author, in his next effort in this direction, would divide his guide into 2 parts, the first part being a brief description of the actual route on the lines of those detailed in that most valuable work, "The Motor Guide to the United Provinces," and the second part briefly describing the chief places of interest passed en route, all packing and personal narrative, such as that of the woman on page 13 and the troubles with the left wheel hub cap, being ruthlessly excised, the result would be a far more valuable and readable work, without in any way increasing the size of the book.

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## CORRESPONDENCE.

DERA ISMAIL KHAN.

17th July 1917.

To

THE SECRETARY,

United Service Institute, Simla.

SIR,

I see in the July number of the United Service Institute Journal that the question of grouping details and employed men and placing them in charge of the 2nd in command has again been brought forward. The primary assumption underlying this proposal is that no training or experience other than tactical is of any value on active service. To the best of my knowledge this is a matter which has never been satisfactorily settled and a brief review from a broader point of view is desirable.

As regards wastage of Battalions in India from external influences, the call for soldiers to perform civil duties is partly a matter of policy and partly one of necessity. Ability to cope with the difficulties of a high rate of wastage generally replaced by men of inferior training is essential for success in War. Advantage should be taken of the drain on battalions in India, although infinitesimal when compared with war wastage, as a preparation for officers in training and administration on active service. Once, however, men are more or less permanently seconded they should be temporarily transferred to the Indian Defence Force, where their training and experience should be of the utmost value.

A brief consideration of regimental and company employ will show, that the majority of employed men are looking after somebody's comfort. It has long been customary in the service to regard all employed men as wasters, and I do not doubt that the grouping of all employ in a 5th Echelon or similar formation would result in an establishment of permanent employ totally unfitted for service in any other capacity. This establishment would be practically without reserves and would be very similar to the follower system of the Indian Army which is now unfort-



unately a necessity owing to caste restrictions. The remedy does not therefore lie in this direction.

One of the guiding principles on active service is that no effort should be spared to make the men comfortable. The health and efficiency of any unit sending both cooks and conservancy men to the depot on mobilization (*vide* page 321 of your July number) would soon deteriorate seriously on active service.

The majority of Peace employ have their counterpart on service and the difficulties of keeping both regimental and company employ within reasonable limits are by no means diminished on taking the Field. Employ should therefore be regarded as a form of training. It is well known that a brief period of employment sharpens men's wits and makes them useful. The old system of making Pte Jones or Smith company cook or sanitary man "for duration" should be abolished. If men are employed on suitable duties by roster for a period of not more than three months at a time, a large reserve of men who would be extremely useful on active service will soon be built up, without any serious interference with other training. The numbers of men employed must, however, be carefully watched by Battalion headquarters. All unnecessary employ should be weeded out and all employed men whose duties do not absolutely prohibit attending parades should attend at least one parade per diem.

As regards the difficulties of administering the band, machine gunners, transport etc. a simple solution is to attach complete bodies to different companies. The officers concerned then deal direct with one company commander only. The training of reserve specialists is best arranged by the introduction of company specialist sections. Each company maintains an establishment of every form of specialists. Training and equipment are arranged by the Battalion Specialist Officer concerned who uses his own men as instructors. One and the same hour per diem is allotted throughout the battalion for this training and all these men are available at other hours for Company Parades.

This System was adopted by a Battalion in France in 1915. As an example, the Battalion Machine Gun establishment was 28



**Correspondence.**

**Non-Commissioned Officers and men.** Each company maintained a similar establishment and the total number of men in the battalion with a knowledge of the machine gun was therefore 140. Constant replacement of wastage precluded any high Standard of training but in any case the Instruction was seldom wholly wasted, whilst the practice in imparting instruction was very beneficial to the Battalion Machine Gunners.

As regards the prevailing idea that the New Army Officer will be a failure in Peace, I would point out that the conditions of active service are to a large extent merely those of Peace, but with a very much larger wastage and consequently very much greater difficulties as regards training.

Training is the essential feature of life in billets and there is not the slightest doubt that the Officers who have coped successfully with the difficulties of maintaining a high standard of efficiency on Active Service will find it an easy task to deal with the same difficulties in a minor form after the end of the War.

The guiding principle of all preparation for War should be that every man should be trained as thoroughly as possible in every duty of every kind which he may be called upon to perform on Service. Many of these duties would appear to be of a civilian nature, but it must be remembered that the health and comfort of the troops is directly involved and training in these duties should be regulated accordingly.

I have the honour to be,

Sir,

Your obedient Servant,

Captain "BLANK"

---

THOBURN HOUSE, APOLLO BUNDER.

*Bombay, July 30th 1917.*

To

THE EDITOR,

Dear Sir,

As the TIMES of INDIA published an article on Saturday, 21st July, from its correspondent in London about the practical



work taken up by the Touring Club de France, which is preparing France fully for the peaceful invasion of innumerable tourists from all parts of the world after the war, may I inform the public through your paper that intending tourists will find it advantageous to be members of the Touring Club de France, whose world membership is over 133,000 at present.

In all French towns, and in foreign countries, there are honorary delegates, who, on being appointed by the Committee of the T. C. F., have promised to render assistance to travelling members of the Club.

Applications for admission must be placed before the Committee in Paris and supported by two members of the Club or by a delegate. The undersigned, delegate for Bombay, will be glad to introduce and support those who wish to avail themselves of the special advantages the T. C. F. reserves for its members : besides general information and guidance, there are reductions on the bill in many hotels, custom-house facilities between various continental countries, etc.

LOUIS PELTIER,

*Thoburn House, Apollo Bunder, Bombay.*







# Survey of India.

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The maps published by the Survey of India are usually available in one or more of the following editions:—

- (1) **Layered Edition.**—Printed in colours with contours and graduated layer tints to show altitudes and shading to emphasize the hills.
- (2) **Political Edition.**—Printed in colours with colour ribands along boundaries, contours to show altitudes and shading to emphasize the hills.
- (3) **Provisional Issue.**—Printed in black with hills in brown. Colour ribands along boundaries are added by hand, when required, at an extra cost of 2 annas per sheet.

The topographical maps from modern surveys, *i. e.* 1905 to date, are printed in 5 colours, while those from surveys prior to 1905 are usually printed in black, or black with brown hills.

The scales of publication are:—

- (i)  $\frac{1}{1,000,000}$  or nearly  $1'' = 16$  miles, in Layered and Political Editions and Provisional issues.
- (ii)  $1'' = 4$  miles, in Layered and Political Editions and Provisional issues.
- (iii)  $1'' = 2$  miles, in Political Edition only, but without colour ribands along boundaries.
- (iv)  $1'' = 1$  mile, in Political Edition only, but without colour ribands along boundaries.

**Index maps** illustrating the publications on the above scales may be had gratis from the Officer in Charge, map Record and issue Office, 13, Wood Street, Calcutta, from whom maps and information as regards prices, etc. may also be obtained.

**Maps on the Government Service** are supplied on book transfer and to the public by V. P. P. except when required mounted, when prepayment is necessary, as maps once mounted for customers cannot be received back.

**General maps of India**, maps of Provinces, Districts and Cantonments, are also published on various scales, particulars of which may be obtained on application.



# United Service Institution of India.

## PRIZE ESSAY GOLD MEDALLISTS.

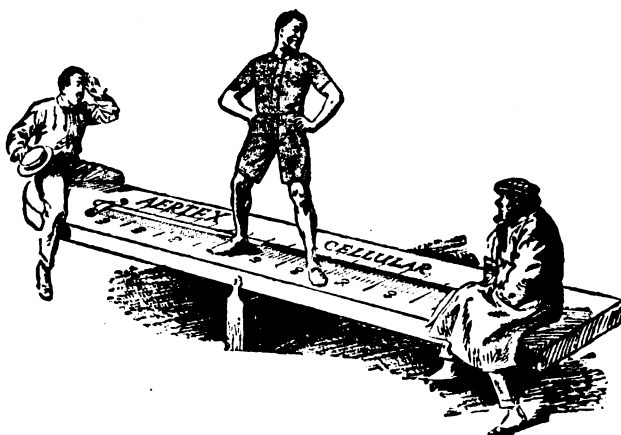
*(With rank of Officers at the date of the Essay).*

- 1872...ROBERTS, Lieut.-Col. F. S., V.C., C.B., R.A.  
1873...COLQUHOUN, Capt. J. A. S., R.A.  
1874...COLQUHOUN, Capt. J. A. S., R.A.  
1879...ST. JOHN, Maj. O. B. C., R.E.  
1880...BARROW, Lieut. F. G., 7th Bengal Infantry.  
1882...MASON, Lieut. A. H., R.E.  
1883...COLLEN, Maj. E. H. H., S.C.  
1884...BARROW, Capt. F. G., 7th Bengal Infantry.  
1887...YATE, Lieut. A. C., 27th Baluch Infantry.  
1888...MAUDE, Capt. F. N., R.E.  
YOUNG, Maj. G. F., 24th Punjab Infantry (especially awarded a silver medal).  
1889...DUFF, Capt. B., 9th Bengal Infantry.  
1890...MAGUIRE, Capt. C. M., 2nd Cav., Hyderabad Contingent.  
1891...CARDEW, Lieut. F. G., 10th Bengal Lancers.  
1893...BULLOCK, Maj. G. M., Devonshire Regiment.  
1894...CARTER, Capt. F. C., Northumberland Fusiliers.  
1895...NEVILLE, Lieut.-Col. J. P. C., 14th Bengal Lancers.  
1896...BINGLEY, Capt. A. H., 7th Bengal Infantry.  
1897...NAPIER, Capt. G. S. F. Oxfordshire Light Infantry.  
1898...MULLALY, Maj. H., R.E.  
CLAY, Capt. C. H., 43rd Gurkha Rifles (specially awarded a silver medal).  
1899...NEVILLE, Col. J. P. C., S.C.  
1900...THULLIER, Capt. H. F., R.E.  
LURBOCK, Capt. G., R.E., (specially awarded a silver medal).  
1901...RANKEN, Lieut.-Col. G. P., 46th Punjab Infantry.  
1902...TURNER, Capt. H. H. F., 2nd Bengal Lancers.  
1903...HAMILTON, Maj. W. G., D.S.O., Norfolk Regiment.  
BOND, Capt. R. F. G., R.E., (specially awarded a silver medal).  
1904...MACMUNN, Maj. G. F., D.S.O., R.F.A.  
1905...COCKERILL, Maj. G. K., Royal Warwickshire Regiment.  
1907...WOOD, Maj. E. J. M., 99th Deccan Infantry.  
1908...JEUDWINE, Maj. H. S., R.A.  
1909...MOLYNEUX, Maj. F. M. J., D.S.O., 12th Cavalry.  
ELSMIE, Maj. A. M. S., 56th Rifles, F. F., (specially awarded a silver medal).  
1911...MR. D. PETRIE, M.A., Punjab Police.  
1912...CARTER, Major B. C., The King's Regiment.  
1913...THOMSON, Major A. G., 58th Vaughan's Rifles (F. F.)  
1914...BAINBRIDGE, Lieut.-Col. W. F., D.S.O., 51st Sikhs, (F. F.)  
NORMAN, Major C. L. M.V.O., Q. V. O. Corps of Guides (specially awarded a silver medal).  
1915...No award.  
1916...CRUM, Major W. F., V.D., Calcutta Light Horse.





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Mr. Henderson takes this opportunity of counselling Military Officers who have not yet insured not to be deterred from going into this question during the War by apprehensions as to the largeness of the extra premiums required to cover War risks. Many Officers are serving under conditions which do not involve payment of such extras, and even in those cases in which in consequence of service at one of the Fronts the payment of War risk extras is, or is likely to be, a liability, Mr. Henderson can recommend a highly advantageous scheme by which many of the drawbacks attending delay and postponement of Insurance can be obviated.

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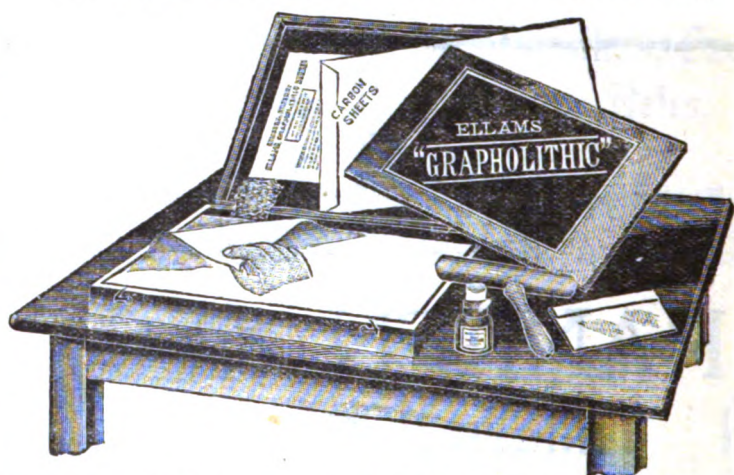
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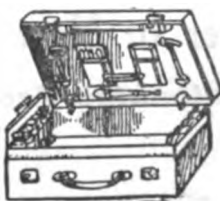
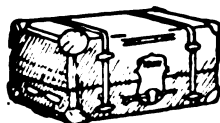
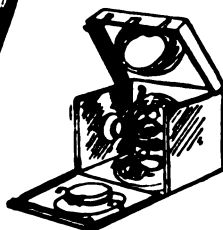
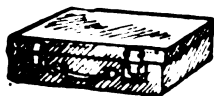
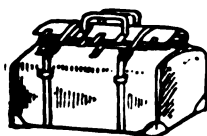
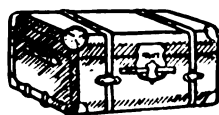
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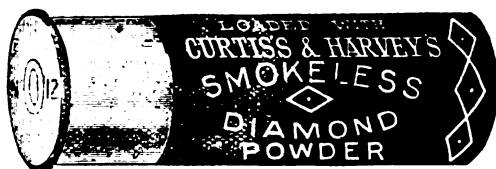
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## MACGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June:—

(a) For officers—British or Indian—a silver medal.

(b) For soldiers—British or Indian—a silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medal, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency, the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution, who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.\*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

### *Note.*

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

### **MacGregor Memorial Medallists.**

*(With rank of Officers at the date of the Award).*

1889...BELL, Col. M.S., V.C., R.F. (specially awarded a gold medal).

1890...YOUNGHUSBAND, Capt. F.E., King's Dragoon Guards.

1891...SAWYER, Major H. A., 45th Sikhs.

RAMZAN KHAN, Havildar, 3rd Sikhs.

1892...VAUGHAN, Capt. H. B., 7th Bengal Infantry.

JAGGAT SINGH, Havildar, 19th Punjab Infantry.

1893...BOWER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).

FAZALDAD KHAN, Dafadar, 17th Bengal Cavalry.

1894...O'SULLIVAN, Major G. H. W., R.F.

MULL SINGH, Sowar, 6th Bengal Cavalry.

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\* N. B.—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves; also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, such as Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.



### MacGregor Memorial Medallists—*contd.*

- 1895... DAVIES, Capt. H. R., Oxfordshire Light Infantry.  
GANGA DYAL SINGH, Havildar, 2nd Rajputs.
- 1896... COCKERILL, Lieut. G. K., 28th Punjab Infantry.  
GHULAM NABI, Sepoy, Q. O. Corps of Guides.
- 1897... SWAYNE, Capt. E. J. E., 16th Rajput Infantry.  
SHAHZAD MIR, Dafadar, 11th Bengal Lancers.
- 1898... WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.  
ADAM KHAN, Havildar, Q. O. Corps of Guides.
- 1899... DOUGLAS, Capt. J. A., 2nd Bengal Lancers.  
MIHR DIN, Naik, Bengal Sappers and Miners.
- 1900... WINGATE, Capt. A. W. S., 14th Bengal Lancers.  
GURDIT SINGH, Havildar, 45th Sikhs.
- 1901... BURTON, Major E. B., 17th Bengal Lancers.  
SUNDAR SINGH, Colour Havildar, 31st Burma Infantry.
- 1902... RAY, Capt. M. R. E., 7th Rajput Infantry.  
TILMI BHANDARI, Havildar, 9th Gurkha Rifles.
- 1903... MANIFOLD, Lieut.-Colonel C. C., I.M.S.  
GHULAM HUSSAIN, Lance-Dafadar, Q. O. Corps of Guides.
- 1904... FRASER, Capt. L. D., R.G.A.  
MOGHAL BAZ, Dafadar, Q. O. Corps of Guides.
- 1905... RENNICK, Major F., 40th Pathans, (specially awarded a gold medal).  
MADHO RAM, Havildar, 8th Gurkha Rifles.
- 1906... SHAHZADA AHMAD MIR, Risaldar, 36th Jacob's Horse.  
GHAFUR SHAH, Lance-Naik, Q.O. Corps of Guides Infantry.
- 1907... NANGLE, Capt. M. C., 92nd Punjabis.  
SHEIKH USMAN, Havildar, 103rd Mahratta Light Infantry.
- 1908... GIBBON, Capt. C. M., Royal Irish Fusiliers.  
MALANG, Havildar, 56th Punjabi Rifles.
- 1909... MUHAMMAD RAZA, Havildar, 106th Pioneers.
- 1910... SYKES, Major P. M., C.M.G., late 2nd Dragoon Guards  
(specially awarded a gold medal).  
TURNER, Capt. F. G., R.E.  
KHAN BAHADUR SHER JUNG, Survey of India.
- 1911... LEACHMAN, Capt. G. E., The Royal Sussex Regiment.  
GURMUKH SINGH, Jemadar, 93rd Burma Infantry.
- 1912... PRITCHARD, Capt. B.E.A., 83rd Wallahabad Light Infantry  
(specially awarded a gold medal).  
WILSON, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.  
MOHIBULLA, Lance-Dafadar, Q. V. O. Corps of Guides.
- 1913... ABBAY, Capt. B. N., 27th Light Cavalry.  
SIRDAR KHAN, Sowar, 39th (K.G.O.) Central India Horse.  
WARATONG, Havildar, Burma Military Police (specially awarded a silver medal).
- 1914... BAILEY, Capt. F. M., I.A. (Political Dept.)  
MORSHEAD, Capt. H. T., R.E.  
HAIDAR ALI, Naik, 106th Hazara Pioneers.
- 1915... WATERFIELD, Capt. F. C., 45th Rattray's Sikhs.  
ALI JUMA, Havildar, 106th Hazara Pioneers.
- 1916... ABDUR RAHMAN, Naik, 21st Punjabis.  
ZARGHUN SHAH, Havildar, 58th Rifles (F. F.)  
(Specially awarded a Silver Medal).
- 1917... MIAN AFRAZ GUL, Sepoy, Khyber Rifles.



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